

Article

Cybersociety and University Sustainability: The Challenge of Holistic Restructuring in Universities in Chile, Spain, and Peru

Guillermo Domínguez-Fernández ¹, Esther Prieto-Jiménez ^{2,*} , Peter Backhouse ³
and Eduardo Ismodes ⁴ 

¹ Department of Education and Social Psychology, Pablo de Olavide University, Curriculum and Instruction, Utrera Rd. Km 1, 41013 Seville, Spain; gdomfer@upo.es

² Department of Education and Social Psychology, Pablo de Olavide University, Theory and History of Education, Utrera Rd. Km 1, 41013 Seville, Spain

³ Department of Industrial Engineering, Bio-Bio University, Civil Engineering, Collao Rd., Concepcion 1202, Chile; pbackhou@ubiobio.cl

⁴ Academic Department of Engineering, Pontifical Catholic University of Peru, Industrial Engineering Section, Universitaria Rd. 1801, Lima 32, Peru; eismode@pucp.edu.pe

* Correspondence: eprijim@upo.es

Received: 12 May 2020; Accepted: 14 July 2020; Published: 16 July 2020



Abstract: The global challenge of the 2030 Agenda and the Sustainable Development Goals present a framework of opportunities, in which universities must respond to the demands of a sustainable social organisation by addressing the issues of quality education, the participation and inclusion of different sectors, and the need to promote university social responsibility. In response to this situation, we examine three experiences that highlight the reorganisation demanded at each of the three organisational levels: (1) Macro: the need for cooperation between different universities in Chile's "macrocampus"; (2) Meso: the organisation and running of faculties in light of the challenges to renew curriculums with the experience implemented by the Social Sciences Faculty of Pablo de Olavide University in Spain; and, (3) Micro: the integration of students and commitment to the needs of the social surroundings, with the E-QUIPU experience implemented at Pontifical Catholic University of Peru (PUCP) in Peru. The report we present is based on a case study, and the findings and conclusions lead us to propose a new holistic-organisational paradigm to facilitate the sustainability of universities. The results of the restructuring allowed us to conduct a meta-evaluation of the sustainability of organisations within a problematic situation (COVID-19), which tested the results of the restructuring objective of Cybersociety.

Keywords: knowledge society; cybersociety; sustainability; networks; university; crisis; 2030 Agenda; COVID-19 pandemic; innovation; culture

1. Introduction

The term Cybersociety appeared during post-modernity to describe the relationship between cybernetics and society through its application to everyday activities, in line with the conception of Jones [1], who understood Cybernetics as the medium that facilitated the communication process, bringing together its social nature with the creation of networks, the product of this interconnection being the generation of new spaces for communication and socialisation, which we call Cybersociety.

Cybersociety [2] brought with it the so-called "Third Industrial Revolution," and we are now on the threshold of the "fourth" revolution (Industry 4.0), based on smart cities and, especially, on the adaptation of the manual productive sector to digital. We understand Cybersociety as the

consequence of applying cybernetics to the different dimensions of educational, business, economic, social, and cultural development. For this reason, with the incorporation of ICT-driven development and the impact this is generating, through process virtualisation and its consequences, new demands are being placed on universities, forcing them to carry out a structural review at all three organisational levels: macro, meso, and micro.

The COVID-19 [3] pandemic has highlighted the difficulties faced by universities, as social organisations, to be sustainable by adapting to the demands of Cybersociety [4]. This challenge to become cyberorganisations requires a structural and managerial change to transform universities into open institutions [5]. Universities have been slow to adapt their teaching to these “sudden” demands, further exacerbating the technological divide and its consequences, deepening the social divide, through the compulsory virtualisation of teaching and the use of Information and Communication Technology ICT [6,7].

This situation will also forge another divide between universities themselves, as only those that successfully respond to the challenge of merging face-to-face teaching, blended learning, and virtual learning, will become sustainable [8]. Similarly, university sustainability involves responding to the demands of the surrounding environment, increasing their social responsibility [9]. This is all framed within an even more ambitious challenge: the 2030 Agenda and the Sustainable Development Goals [10]. Along these lines, we understand that university reorganisation should pursue quality education (SDG4), incorporating a participatory and resilient culture that seeks to include different agents in decision-making (SDG11), fostering responsibility and social commitment to the surrounding environment as a measure of efficacy (SDG16) [11].

This new cosmogony, forged through the interweaving of cybernetics, communications networks, and their interaction with society for the generation of knowledge, has created the concept of cyberorganisations [12], corroborated by the whole experience of the COVID-19 pandemic, which are characterised by: (a) greater organisational complexity (macro, meso, and micro), which requires more integrated leadership and management of the different factors, through the alternation of different modes of teaching (face-to-face, virtual, and blended); (b) holistic organisational restructuring, integrating organisations into other networks, and facilitating management by processes; (c) the capacity to generate a cyberculture [13] in all members of the organisation, in order to carry out this process of changing values, wherein collaborative culture and social commitment become the new concept of efficacy; and (d) the conversion of knowledge organisations into institutions that mediate with communication systems, re-articulating their structural components into three types [14]: macro-components (reticularity, glocality, mediationality); meso-components (technological mediation as cognitive and intellectual processes and ICT); and micro-components, which turn the macro and meso processes into tangible, operative components of design and execution.

This change, structured through the integration of all three levels, can only be based on genuine holistic restructuring and reorganisation within the university, as a cyberorganisation, together with innovation, what Wiseman [15] called the “Third Generation University.”

Since no university has integrated these dimensions yet, we have undertaken a study in which we present three successful, complementary experiences, responding to the need for change within the coordinates of Cybersociety [2,16] and the Generation of Knowledge [17,18] for this organisational change.

1. An innovative proposal at the macro level of organisation: Chile’s Macrocampus or Holonic network. The first area studied, as an example of integration into other networks, and of the integration of several campuses into just one, is an experience involving the creation of a single, interinstitutional holonic network or the Engineering “Macrocampus” of the Centre-South of Chile, with the consolidation of a network that integrates three universities-faculties, Talca, Bío-Bío and De La Frontera (spread out over approximately 1000 Km). The purpose is to join synergies for innovation, improve results and optimise domestic and international competitiveness [19]. This experience won the “World Class Engineering 2030” competition and is jointly financed by

the Corporación de Fomento de la Producción (Corporation for the Improvement of Production, or CORFO, part of the Chilean Ministry of the Economy), and by the three participating faculties, to the amount of €16.5 million. Today, it is addressing the second phase of internal restructuring. By examining this experience, we are dealing with the first characteristic of Cybersociety: the complexity of networked management [20].

2. Re-organisation at the meso level: Innovation within Faculties. In the second area, we studied the need for internal restructuring in a university, focusing on the creation of coordination structures that encourage the integration of vertical units through tasks in key processes of a horizontal nature. In this respect, we present the experience of the Faculty of Social Sciences at Pablo de Olavide University (UPO) Spain which, faced with the challenge of the bureaucratic Bologna process, developed an innovative project to draw up syllabuses, proposing an integrated management model for the centre, with teacher training and support plans, converging with the successful process for the accreditation of qualifications and the centre (as a pilot centre). In this integrated management process, innovative coordination structures were created: Pedagogic Learning Communities (PLC), facilitating the involvement of teachers, students, tutors, and external agents, such as professional associations. Over 600 teachers and 3000 students were involved each year. The project was financed from European funds under the EU Convergence Project with approximately €35,000 over six years. By studying this initiative, we will deal with the second dimension of Cybersociety: the holistic organisational restructuring of universities, integrating academic planning, training, and innovation into management [21].
3. At the micro level of reorganisation: the creation of flexible open structures. Finally, in the area of inter-faculty coordination and restructuring, in response to the demands of the socio-productive fabric and to facilitate the social and professional integration of students, we describe the innovative experience conducted by the Pontificia Universidad Católica de Perú (Pontifical Catholic University of Peru, PUCP), which set up a structure called E-QUIPU. Its purpose was to facilitate interaction between students and society and the socio-productive world, as a first experience of personal and professional socialisation. The network was founded in the PUCP, although today there are students participating from 13 universities, with over 900 teams and approximately 10,000 participants. The network takes its name from the mechanism used by the Incas to record information (quipus), and the “e” refers to the use of ICT to promote teamwork [10]. It has an annual budget of \$120,000. In 2007, it received the Andrés Bello Prize from the Union of Latin American and Caribbean Universities (UDUAL). This final experience corresponds to the third characteristic of Cybersociety: the creation of a culture of collaboration, inclusion, and socio-economic commitment to the surrounding environment [11,22].

These three experiences linked to the three levels of organisation must be interdependent and holistic in their organisation, thereby responding to the fourth characteristic of Cybersociety: the transformation of universities into social cyberorganisations. In order to adapt to the dimensions of Cybersociety and achieve sustainable universities, more focused attention needs to be paid to training, to links with the surrounding environment, innovation, and entrepreneurship [23,24]. This is all reflected in the quality indicators used in University rankings, such as the Shanghai ranking [25]. There are four key factors in the positive classification of a university, coinciding largely with those described in our three areas: the need to encourage change and innovation; the use of ICT; integrated corporate governance; and the need to restructure universities (flexibility). ICT are an instrument for change and improvement in universities [26,27] as demonstrated by the Global Innovation Index [28], not only as a support for communication between the different nodes of the networks [29], but also as instruments to facilitate the exchange of ideas and culture, themselves becoming part of the innovation, through cyberculture [30,31]. The importance of this lies in the need to integrate them in the new cyberculture of internal organisational communication and relationships with the networks of other external agents, as well as the networks of other universities [32–34] as the essential axis of the process

of structural and social innovation in university organization to respond to the social and economic needs of the surrounding environment.

In light of this situation, the study presented here seeks to lay the foundations to effect holistic organisational change in universities, in order to ensure they are sustainable institutions in the face of the demands and challenges posed by Cybersociety and the current context [35]. Hence, three questions have been formulated, to be answered over the course of this article: How does the current reality and context demonstrate the need for university restructuring in order to respond to sustainability? Is Cybersociety the new context in which the restructuring of universities as sustainable cyberorganisations is to be approached? And, finally, what type of restructuring do universities require in order to respond to current demands, in their three levels of organisation: macro, meso, and micro?

2. Materials and Methods

In order to achieve the aims set out, and to answer the questions raised previously, a methodological process was developed with a qualitative research approach, based on a case study [36], the common criteria [37] of the three international experiences being innovative change in the traditional university structure by means of a new, integrated, collaborative culture. In this section, we shall detail the methodological process of each one.

To analyse the process of reorganisation within universities, we began by choosing three institutions [38] as the focus of our study. These institutions have been selected in accordance with a series of variables, which will subsequently allow us to draw valid conclusions about the subject of this research [39]. Four variables were selected: organisational level in which the experience has been developed; level of institutional support; degree of innovation; and action evaluated with a positive impact, as we can see in the Table 1.

Table 1. Variables used when selecting the three case studies. Source: authors' own.

	Level of Organisation	Institutional Support Outside the University	Degree of Innovation	Action Evaluated and Positive Impact
Chile's Macrocampus	Macro	Corporation for the Improvement of Production (Corporación de Fomento de la Producción CORFO-Chile's Ministry for the Economy)	Project Horizon 2020	World Class Engineering 2030 Awards
UPO Faculty	Meso	Professional Association of Social Educators in Andalusia—Spain	European Convergence Project	Favourable reports from the National Evaluation and Quality Agency
Peru E-QUIPU	Micro	Socio-productive fabric of the surrounding environment	Research and Development projects /Innovation project	Andrés Bello Award from the Union of Universities in Latin America and the Caribbean (UDUAL)

These three initiatives, studied in accordance with the same criteria, will form a single case study on the reorganisation of universities within all three levels of organisation.

The following section sets out the methodological processes followed when developing and evaluating these three innovation experiences, with a view to identifying successful outcomes and good practices, which will subsequently become the basis for the model of holistic organisational change proposed at the conclusion of this article.

2.1. Method Used in the Chilean Macrocampus

Three universities from the centre-south of Chile came together to create a “macrocampus,” with the involvement of 7000 undergraduate students, 500 postgraduate students, and 400 full-time members of the teaching staff.

The general methodology applied when designing the Strategic Plan for the Engineering Faculties at the Universidad de Talca, Universidad del Bío-Bío, and Universidad de La Frontera begins with a

comprehensive internal analysis of the education model used in each Faculty, a global external analysis (benchmarking), and, on the basis of these two analyses, the Strategic Plan is defined to transform faculties, taking this plan from the strategic/tactical level to an operational level and developing a monitoring system. Advisory bodies participate in each of these stages, making contributions from their respective areas of expertise, in order to enhance the complementariness of the experiences.

During the strategy definition phase, an analysis was conducted of the three Faculties, seeking to generate synergies through joint and complementary actions.

In order to evaluate this experience, which corresponds to the macro level of organisational management included in our case study, we have formulated the following questions: which stages were followed in the needs analysis for change in the Chilean Macrocampus? Which areas within universities are the basis for change? Which quantitative indicators form the basis of self-diagnosis? Which stages are developed in the global external analysis? Which are the areas of interest when developing qualitative indicators? Which elements would make up the diagnostic model required to effect reorganisation at a macro level?

The resulting information is presented in the next section, allowing us to identify the elements that need to be tackled within the process of university organisational change in response to the first dimension of Cybersociety: the complexity of networked management.

2.2. Method Followed with Regard to the UPO Faculty of Social Sciences

In the second experience analysed, with the creation of coordination structures for integrated faculty management, the case of the Faculty of Social Sciences at UPO (Seville-Spain) was studied. In response to the demands of the Bologna process, the Faculty proposed the creation, through an innovative, participatory culture, of spaces that became structures for the coordination of processes (Pedagogical Learning Communities, degree commissions, etc.) and the launch of the new qualifications.

By studying this experience, we aim to analyse how this university, in response to external demands, developed a holistic organisational restructuring, in line with the second dimension of Cybersociety, which will highlight the recommended elements for meso organisational change.

This process was structured in 3 phases:

- Phase 1 (2009–2011): the creation of on-line tools and spaces for the exchange and improvement of good practices in the faculty (150 teachers participated).
- Phase 2 (2011–2013): the construction of interdisciplinary coordination structures, the Pedagogical Learning Communities (PLC), which drew up the reports for the Modifica Report (over 60 teachers participated).
- Phase 3 (2014–2015): validation of the skills acquired by students, which were transferred through practice (210 students, 127 external supervisors at the work placement centres, and 15 Faculty teachers). To this end, a questionnaire was completed by 210 students and 127 external work placement supervisors. Furthermore, in-depth interviews were conducted with 15 faculty teachers. The questionnaire comprised 15 items that tackled the following dimensions: global assessment of the work placement process; acquisition of competences; transfer of competences; global assessment of student training; need for improvements in training. The questionnaire was applied to all three qualifications taught at the faculty: Social Education, Social Work, and Sociology. Data were analysed on the basis of descriptive statistics, using SPSS. 20.0.
- Phase 4 (2016–2020): Dissemination of the results of the experience through different national and international forums and publications.
- We will focus on this case in phase three, since during this stage, all the participants in the process evaluated the coordination, training, and change developed in the previous phases. All the work carried out to improve the qualifications taught will be directly reflected in the practical performance of the students, where they can implement all the competences acquired, and we can

then see if the professional education and training provided by universities is responding to the real needs of the socio-professional system.

- To include this project as the second section of the proposed case study, we formulated the following analytical questions: Which stages were followed in the process of change? Which sectors or areas of the institutions were involved in the change? Which methodologies facilitate change at this organisational level? How is the change achieved evaluated by external agents? Which elements would make up the model of change within meso organisational management?

2.3. Method Used to Study the E-QUIPU Experience in Peru

Finally, in the case of E-QUIPU, the objective was to create inter-faculty structures involving students and teachers in a network through the application of ICT [19], in order to interact with the socio-productive environment, thereby completing the basic training necessary for their future professional and personal development. To support integration within the network, a computer platform was developed in which the teams, team members, and the activities they undertook were registered.

On this occasion, we present the methodological process used to evaluate the evolution and impact of the project. The evaluation process involved 131 E-QUIPU graduates (making up a representative sample, with a margin of error of 5%), 5 teachers, and 6 project managers. The data were collected by means of a questionnaire, designed in accordance with the following variables: occupational/professional integration, improved professional competences, improved social skills, involvement with society, and future impact on the surrounding environment. Descriptive statistics were used for data analysis, focusing exclusively on frequencies and percentages, setting up the correlational study for future publications.

The questions formulated with regard to this third section of the case study on the organisational restructuring of universities at a micro level were as follows: Which stages were followed in the creation of E-QUIPU? How has the experience responded to the demands of the surrounding environment? What were the major organisational changes required to effect a change in culture? What are the principle elements implemented that help to make the university more sustainable at a micro level?

Analysis of this experience will tackle the third and final organisational level within universities, the micro level, responding to the third dimension of Cybersociety: the creation of a culture of collaboration, inclusion, and socio-economic commitment to the surrounding environment.

3. Results

This section presents information about the data compiled from the experiences analysed. To this end, the section may be divided by subheadings. It should provide a concise and precise description of the experimental results, their interpretation, as well as the experimental conclusions that can be drawn.

3.1. Results of the Analysis of the Chilean Macrocampus. The Creation of Inter-Institutional Networks: A Holonic Network

The first data presented below pertain to the experience of macro reorganisation. The methodological process of internal analysis carried out in the case of the Chilean Macrocampus was divided into the following stages:

1. Definition of common indicators to measure results and impact for Engineering Faculties of State Universities in Central-Southern Chile.
 - Definition of World Class indicators to measure result and impact on Research and Development projects(R&D)Innovation/Enterprise.
 - Definition of World Class indicators to measure results and impact in terms of internationalisation, competitiveness, outreach, and linkage.
 - Definition of indicators to measure the results and impact on associativity.

2. Creation of Baseline Indicators per Faculty.
3. Creation of Inter-Faculty Baseline Indicators.
4. Development of Internal Analysis of Organisation (SWOT).
 - Workshops (Focus Group, Brainstorming, or other methods) with Stakeholders (by region).
 - Systematisation of Results and Conclusions in Workshops.
 - Mission to become a World Class University.
5. Creation of a matrix for self-evaluation and self-diagnosis.

The first result generated by the experience of creating inter-institutional holonic networks was the identification of 18 valid quantitative indicators for the monitoring of each of the three Faculties, with the following results. Thus, a number of key indicators of the future of Engineering in the University were agreed by consensus, such as the needs of socio-productive demands. To define this profile, 18 quantitative indicators were used (subdivided into 46 items with 3 evaluation factors), which made it possible to compare and complement the state of development of the Engineering Faculties and to systemise the information to give a qualitative definition of the strategic orientation that world-class universities have given to their Development Plans, to arrive at these global levels, as can be seen in Table 2.

Table 2. Reference quantitative indicators. Source: authors' own.

Indicator	Area	Indicator	Value
1	Undergraduate Training	Real degree completion time	7.5
2		N° of FTE academics	282
3		% Master's degrees	30.9%
4		% FTE Master's degrees	30.5%
5		% Doctorate	43.5%
6		% FTE doctorate	41%
7	Research and Development	Total R&D funding	\$535,230.116
8		Annual publications in ISI and Scielo	262
9		Number of annual citations	2528
10		Annual funding from competitive sources	\$3,333,318.000
11	Technology Transfer, Innovation and Enterprise	Licences, options and assignments to start-ups, spin-offs and existing companies	1
12		Sponsored R&D agreements, collaborative projects and contracts	12
13		Budget of the R&D contracts and collaborative projects	\$213,354.000
14		Consultancy contracts	\$114,172.743
15		Licences granted	4
16		Patents applied for	8
17		Patents granted	6
18		Industrial Property Rights acquired	0

Based on the results obtained from the comprehensive diagnosis carried out, the next step was to detect the gaps with other universities in the world. This analysis was carried out by means of benchmarking, and the process was guided through the following phases:

1. Consultation Coordination Seminars—Faculties of the State Universities Central-South Chile: Creation of the benchmarking team

2. Define World Class Institutions
3. Develop objective benchmarking for Higher Education Institutions
 - 3.1. Compile information and analyse institutions
 - 3.2. Visit one of the universities analysed
 - 3.3. Presentation and analysis of results

Once the reference indicators had been identified and quantified, a benchmarking process was undertaken, in which five international universities were taken as references, defined by the Alliance of Faculties as representative of the different sectors studied, as can be seen in Table 3.

Table 3. Quantitative indicators in the benchmarking process. Source: authors' own.

Institution	Area Used as a Reference Model		
	Training	Relationship with the Environment	R&D, Innovation and Enterprise
Tecnológico de Monterrey	Oriented towards the training of professionals. Innovative strategies.	R&D in fields of the knowledge economy Transfer of R&D results.	Relevant player in innovation and enterprise. Significant vocation.
Chalmers Univ.	Innovation training model	Successful experience in mobility and relationships with industry.	
Univ. Politécnica de Valencia	Broad training	Significant orientation towards relationships with the environment, with the business world.	Significant advances in innovation and enterprise after some initial difficulties.
Univ. Sao Paulo	Broad training. Complex University. Outstanding postgraduate and continuous education	Relationship with the community, with the business world.	Relevant player in R&D and innovation.
RMIT University	Successful training		Successful innovation experience.

Taking the five aforementioned universities as references, the main findings were, institutionally:

- The need to define a postgraduate strategy encouraging the creation of postgraduate studies in the “macrocampus,” providing grants to stay at foreign universities.
- Deficient links with the socio-productive fabric, in comparison with the focus on research oriented towards publications and competitive projects.
- Insufficient training of doctorate teachers, with low levels of technology transfer.

Application of the model:

- Limited number of postgraduate students: little diversity in the offer of master's degrees and doctorates, generating little interest among students.
- Insufficient use of R&D, innovation, and teaching methodology and laboratories, due to a lack of knowledge and the use of obsolete educational models.
- Low level of research in comparison with international peers.
- Insufficient orientation towards innovation: activities have not been incentivised.

Good practice and accreditation

- The need for standards-based accreditation systems, since they achieve better use of good practices (USA, Canada, Hong Kong).
- Lack of positioning of the students in the professional world.

3.2. Results of an Innovative Horizontal Coordination Structure for the Integrated Management of a Centre

Having implemented the strategic innovation plan for the management of the Faculty of Social Sciences at UPO, a series of results was obtained, presented below in each of the phases.

- Phase 1. The creation of spaces and tools as horizontal structures for the exchange and improvement of good practices. During this stage, there were two different lines of intervention. One produced a computer application for the creation of teaching guides, in accordance with the Bologna requirements and verification reports, with the aid of experts from Rovira i Virgili University. In the second line, spaces were created for the exchange of good practices through the Faculty's 1st Meeting on Innovation. The result of this stage was the adaptation of the subjects included in the previous curriculum to the demands established by the Bologna Process. The greatest difficulty was formulating competences and learning outcomes, as well as reformulating the evaluation process. After the training received from faculty members in this stage, 70% of the teaching guides were validated by external experts, having been adapted to new demands using the bespoke online tool designed. In turn, the participating teachers became involved in the culture of change, obtaining benefits in terms of support for their teaching and management duties, as well as information that will help them to innovate based on the demands detected in the surrounding environment.
- Phase 2. The construction of interdisciplinary coordination structures, the Pedagogical Learning Communities (PLC): considering the needs detected in the first phase, different coordination structures were defined. We should highlight the two main structures: firstly, the coordination commissions for each of the qualifications, which exchange good practices for the improvement of the degrees and catalyse the management of the syllabuses; and, secondly, the creation of three Pedagogic Learning Communities, one in each single honours degree, advised by [40] where, using European Centre for the Development of vocational training, CEDEFOP methodology for blocks of skills, the improvements were achieved [41]. The final product of this phase was the reformulation of skills, the definition of learning outcomes, objectives, content, methodology, resources, and evaluation, consolidating spaces for the exchange of good practices with the second Meeting on Innovation. These new coordination structures helped to identify key problems following the implementation of the new curriculums. Students, faculty staff, and management staff all participated in these learning communities (one for each qualification taught: Social Education, Social Work, and Sociology). The most prominent aspects are collected in Table 4:

Table 4. Positive and negative aspects to phase two. Source: authors' own.

	Positive Aspects	Negative Aspects
Faculty	Change in the role of educator Greater pedagogical demands Increase in interdisciplinarity Use of ICT	New timetabling structure Heavy workload in teaching and management Lots of meetings Little recognition of teaching work
Students	Smaller class sizes Training in competences Facilitates mobility Responsible for their own learning process	Excessive number of teaching hours Saturation of tasks Upset with timetables Difficulty transferring what they have learned
Management Staff	Standardisation of tasks	Excessive workload

Following this second stage, the best way of evaluating the entire process of meso organisational change was deemed to be through comparison with the assessments of external agents. The professionals who supervised students' work placements provide their professional opinions to verify whether the education management process implemented has been a success and whether the students are ultimately capable of delivering high quality professional work.

- Phase 3. The evaluation and validation of the skills acquired by the students: using an evaluation and research process, a report was drawn up for each qualification, which was the key for the self-reporting and renewal of the accreditation of qualifications and the centre. Students, teachers,

and external supervisors took part in these horizontal coordination structures, which evaluated the degree of skill transfer, as shown in the Figure 1.

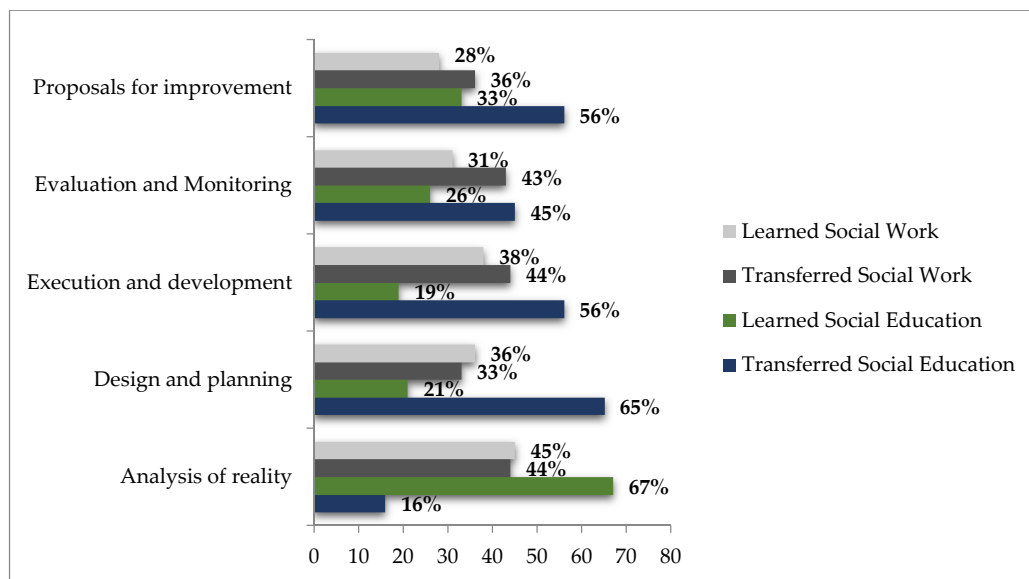


Figure 1. Evaluation of the students' skills by work placement supervisors. Source: authors' own.

We also present the general findings pertaining to the students' training and work placements from different perspectives [42]:

1. Regarding the conditions required to apply the competencies learned in the professional setting of work placements: The majority of external supervisors (90%) and students (82%) felt that the required conditions were in fact in place.
 2. Regarding the duration of the work placements to apply competencies: 63% of the external supervisors and 78% of the students responded that the duration of the work placements was sufficient to apply their competencies.
 3. Regarding the suitability of the tasks performed during work placements in relation to the contents and competencies acquired by the students during their training: 61% of the students and 56% of the external supervisors surveyed felt the tasks were adequate.
 4. Regarding the working relations of the students during their work placements for the development of their competencies in their place of work: 63% of the external supervisors and 61% of the students rated this aspect very adequate.
 5. Link between work placement and incorporation into the labour market: 100% of the external supervisors felt that the training in competencies acquired by the students will help them find work in the future, and 93% of the students agreed. In addition, 100% of the external supervisors and 84% of the students believe there is a link between the work placements and their future professional pathways.
- In the case of Sociology, the blocks of competences identified were different to the previous qualifications discussed; hence, work placement supervisors showed greater interest in research rather than intervention (53%). With regard to the main competences, they highlight those related with research techniques (46%) and report writing (40%).
 - Understanding the differences between the skills learned in the qualifications and their transfer to the workplace setting favoured the valuation process of the qualifications. But the main result was not centred exclusively on the renewal of accreditations, but on the fact that different agents within the university community were involved in the culture of organisational change, taking advantage of the demands of the system.

- Phase 4. Dissemination of the results of the experience through different national and international forums and publications: The last stage related with the dissemination of results is currently ongoing, sharing the development of good practices with other institutions for use as a model when converging the three core aspects of training, innovation, and adaptation to the surroundings, for any reforms or actions developed within the meso level of university organisation.

3.3. Results of the Process of Creating of Inter-Faculty and Interdisciplinary Structures for Relationships with the Socio-Productive Environment

The main result achieved by the E-QUIPU initiative was the involvement and participation of authorities, faculties, and departments of PUCP with different specialities, together with students, graduates, and their associations. The project also managed to involve other networks such as the media and external political, social, and productive agents.

As shown in Figure 2, since its creation, E-QUIPU has grown steadily. One significant event in the evolution of this initiative is the fact that, between 2011 and 2013, the original team driving the project left to focus on other occupations. Once the project was reinitiated, the growth rate for active teams began to increase once more. In 2016, there was a decline as all efforts were focused on changing the platform. This change, combined with the return of many members of the original driving team, and the involvement of former students, now themselves team leaders, has enabled Figure 3 to be attained over the past few years.

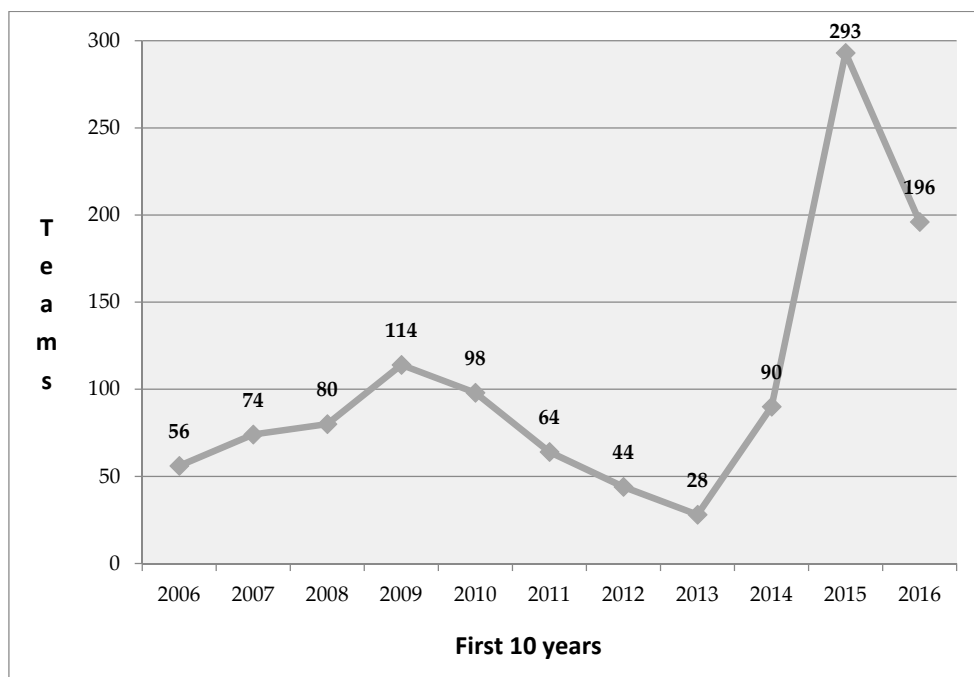


Figure 2. Evolution of E-QUIPU over its first 10 years of existence. Source: authors' own.

To do so, the following inter-faculty and interdisciplinary structures were created in different areas: Executive Management, Communications, Administration and Team Management, Human Resources, Computer Support, and Economics. The purpose was to consolidate and catalyse management and achieve maximum efficiency.

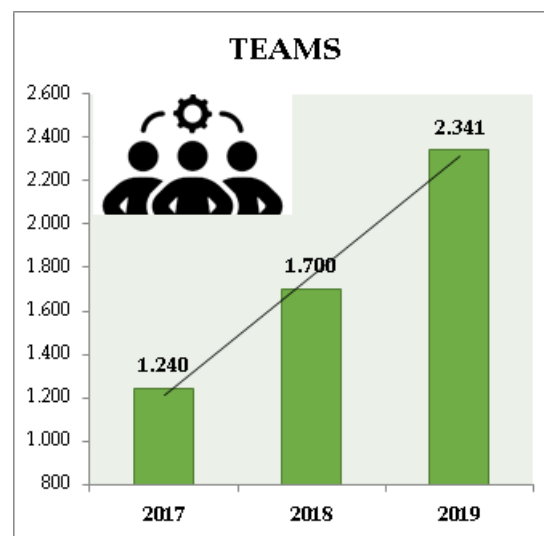


Figure 3. Evolution of E-QUIPU over its last three years. Source: authors' own.

The results following the evaluation of E-QUIPU, in accordance with the variables selected to identify the success of the project and its positive social impact, are set out below, in Table 5:

Table 5. Evaluation of E-QUIPU. Source: authors' own.

E-QUIP	Students	Teachers	Managers
Facilitated professional integration	60%	54%	100%
Improved professional competences	61%	62%	100%
Improved social skills	77%	85%	100%
Involvement with social problems	62%	62%	100%
Positive future impact on the surrounding environment	85%	100%	100%

Analysing the data presented above, we see that although positive overall, the managers in particular seem to support fully the actions included within the E-QUIPU initiative, with regard to student training, as well as impact and social commitment. This also leads to the external validation of the programme.

Over these 14 years, the main result was the development and perfecting of a network structure with external agents, encouraging interaction between the students and their future working lives. Other structures were also created, such as the Medical Image Laboratory (LIM), and over a dozen research groups at PUCP, on Biomaterials, Bioengineering, Physics, Engineering, Software, Internet, Environment, etc. Thirteen Peruvian universities joined the network. Cultural and social economy enterprises and organisations were incorporated. Finally, dozens of start-ups were generated, incorporated through government tenders or private entities, which are in the process of developing their business models.

4. Discussion

This section discusses the data presented in the previous section from an analytical perspective. This analysis will be based on the three organisational levels developed throughout the article, and their direct relationship with the three experiences analysed:

Chilean Macrocampus: At this macro level of organisation, allusions have been made to the need to create networks (holonic networks) between different organisations, but this has rarely materialised in the form of a university macrocampus such as the one presented in this study. The tendency to continue along the current path in spite of the demands of society today provides evidence

of this line. The experience of the three Chilean universities involved in this initiative (Bio-Bio, Talca, and de la Frontera in Temúco), merging their faculties, gives rise to a networked university macro-organisation, encompassing an area of more than 1000 kms, working towards the 2030 Agenda World Engineering challenge. The different elements of the strategic plan from different specialist fields and subjects have been consolidated with the corresponding groups, which are helping to enrich the perspective of each institution, and improve organisation, qualifications, and teaching processes, through research, setting up open inter-university groups, which have enriched all concerned. However, this process has highlighted the need to create a culture of collaboration in order to share general values and goals, above and beyond the specific individual interests of each university. It is a long process that requires change at other levels. To achieve this, the process must be driven by leaders who are aware of this and who can assure networked integration by means of a coordinated holistic approach (holonic networks) [3,9,20] that would enable them to respond to the demands of sustainability, as a challenge for universities.

UPO Faculty of Social Sciences: at the meso organisational level, one of the positive aspects is that it was the first faculty to validate its qualification verification report for implementation, and to accredit the qualifications taught within the European AUDIT pilot project. The curriculums developed are currently still in place and have been renewed once more, involving faculty staff in the changes made to the curriculums and turning the Bologna process into a means for improving, breaking away from bureaucratic models. The Faculty's training plans have not been in such high demand since then. Furthermore, professional associations are still participating as the reference for initial and professional training, even for the continuous training of the collective. However, there has been no continuity for this process because it represented an institutional milestone in relation to curriculums, but it was not consolidated through adaptation to new teaching needs. This is due fundamentally to the fact that the culture of collaboration developed initially, with high levels of involvement, has not continued, and the atomised culture of organised anarchy typical of bureaucratic universities has once again taken hold. The last hope of this experience is that new coordination forms and structures will be defined inhouse and in line with the professional reality of the three qualifications taught by the Faculty and the socio-professional surroundings [43].

E-QUIPU: Finally, within the micro level, the data from the experience implemented at the Pontificia Universidad Católica de Perú indicate that it has been successful, facilitating employability and enterprise and, in general, integration into the socio-productive system. Further proof of this is the growth capacity that has been transferred to other groups, universities, institutions, and companies over the course of a decade. Currently, groups are often led by alumni from the first few years, exporting this initiative to other settings as a "reference model" for training, innovation, employability, and commitment to the surrounding environment. A platform has been set up for innovation, giving rise to one of the largest clusters in terms of innovation and number of patents, achieving international recognition. This has gradually consolidated a culture of innovation, R&D, and enterprise. However, within the institution, it has always been considered a collateral activity and temporary experience, with a marked lack of engagement among the university's leadership. Furthermore, the other two levels—institutional structure, and stable sustainable growth—have also not been incorporated, since they lack the funding required for the scope of the experience, so this initiative is far from consolidated. Continuity would only be achieved if the other two organisational levels were incorporated into this experience, by means of institutionalisation, within the formal structure of the university, and for it to have a stable budget and the human resources it needs to consolidate its operations. Future research would involve analysing the key elements required so that, given its impact, the university's leaders and structures reconsider it as an essential component of their institutional strategy within the everyday teaching, research, and organisational work of the institution. This would consolidate the experience as a key structure relating internal teaching processes with the socio-productive environment for training in competences, employability, enterprise, and the sustainability of the university [4,22].

Considering the three cases as part of a whole, the key finding is that the holistic reorganisation of universities at all three levels requires institutional support, with a culture of change, connection, and commitment to the immediate surrounding environment.

Sustainability, as a holistic concept, has an impact at all three levels, if university education is to be based on a concept of quality that prioritises indicators of participation, inclusion, and social responsibility. Hence, the proposed restructuring would respond, through management and socio-economic commitment, to the most important challenge facing universities: responding to the 2030 Agenda and the Sustainable Development Goals (SDGs).

5. Conclusions

To bring this publication to a conclusion, we shall answer the three questions formulated in the introduction to this article, which have been the unifying thread running through the whole study.

How does the current reality and context demonstrate the need for university restructuring in order to respond to sustainability?

Throughout this article, we have stressed the need for universities to keep pace with changes in their surrounding reality. Today, we are facing a major global challenge, reflected in the 2030 Agenda and the SDGs, and universities must be involved in achieving these goals. On this path, universities must take into consideration different emerging scenarios and consider how they are expected to respond to them. One example of adapting to different scenarios has been the outbreak of COVID-19, and above all its rapid spread around the world. It has demonstrated beyond any doubt the globalisation of the planet. The consequences of this pandemic—bringing social and economic life to a standstill in just two months—have broken down the system of relations, and humanity has had to turn to ICT in response. In the case of face-to-face training and education, delivery has had to be virtualised, and the consequence of this has been a deepening of the technological and social divide present among students and teachers. This calls for urgent reorganisation that responds to social balance (inclusivity) [44,45].

Virtualisation, as a social and educational demand, has forced universities to rethink their model of teaching and learning, and consequently the role of faculty members and their readiness to adapt to online delivery. This rethinking has called into question the sustainability of numerous universities, either through a lack of funding or the need to effect structural and organisational changes [46,47].

Hence, the answer to this first question would certainly be yes, since COVID-19 has highlighted the fact that the organisational structure of university education is lagging behind the times [3,48], and universities have had to accelerate the process of virtualisation over two months, when the process linked to Cybersociety could have been developed over several years. Therefore, this need for reorganisation cannot be temporary or short term (what can we do for the next academic year?), but rather, if universities wish to be sustainable, they must demonstrate their capacity for more open and flexible structural change [49].

Is Cybersociety the new context in which the restructuring of universities as sustainable cyberorganisations is to be approached?

As discussed throughout this article, Cybersociety and connectivity through ICT are new demands being made of universities [40,41,50,51].

In this new context, virtualisation will require more multi-faceted and versatile universities, with a greater capacity to adapt to change [49]), responding swiftly to the demands of society, the productive system, and above all, utilising technological changes (ICT) [45,52]. New social demands will require university provision to be a la carte, giving students full choice in line with their needs and expectations, and this will be one of the main challenges facing universities as sustainable social cyberorganisations [53].

The future subsistence and sustainability of universities will rest on the creation of a culture of collaboration and participation, breaking down the technological and social divide, pursuing their mission as organisations with a social responsibility [8].

This need to change the role of universities is also driven by globalisation, as supported by different studies [20,54,55], in order to respond to the current context of Cybersociety, Revolution 4.0 [56], and Cybereducation, breaking the technological and social divide, from their position of social institutional responsibility. To this end, the key factor will be, above all, holistic reorganisation and restructuring, as cyberorganisations, at the three levels—macro, meso, and micro—so as to respond to the demands of the surrounding context [34,57].

In this context, what type of restructuring do universities require in order to respond to current demands, in their three levels of organisation: macro, meso, and micro?

To ensure that the structural changes effected in universities respond to new demands and address the technological and social divides, this process must involve all three levels of organisation, coordinated interdependently and holistically, in order to integrate with other holonic networks [50,51,56], from involvement with the surrounding social context [58], to generating transferable knowledge that impacts on local and regional development [59,60], as well as social development.

To ensure the restructuring proposed here is holistic, change must be effected at the three levels of organisation [61]: (a) macro: at management level and in terms of the university's relationship and integration into other (holonic) university and research networks, and as a social agent for inclusion and social responsibility [62]; (b) meso: reviewing organisation internally, promoting coordination and management by processes in order to adapt to the new situations of macro networking; and (c) micro: in terms of the relationship between teaching/learning processes and how they tie in with the requirements of employability and training in the surrounding socio-productive context, to improve the social integration, employability, and promotion of students [57].

At this current time, such in-depth change is not visible in any of the university institutions studied, but we have examined three experiences that, when viewed together, provide the holistic structural change proposed here.

At the macro level, the need for universities to reorganise and restructure as social cyberorganisations, integrated into different hologenic networks [63]; applied to universities by [40,61], will lead to the need to coordinate, foster, and facilitate the participation and involvement of all members through a process of continuous innovation [64–67] that is similarly sustainable [23,48,68]. Logically, this entails restructuring the organisation internally, with a more comprehensive management of the three levels to integrate into these networks. The macro experience of Chile's Macrocampus demonstrates that this process of integration into a large reticular structure has led them to develop a process that merges with changes in the roles of organisations and their leaders. This, in parallel, generates a convergent positive impact at other levels, as a process of integration and permanent innovation, with the coordinated participation and involvement of all members [11].

At an internal meso level, universities should be structured on the basis of comprehensive integrated management [51,59], not by processes or by tasks. To achieve this, greater coordination is required along with multidirectional flows structured through duly coordinated networks and specialised working groups, which could improve the efficacy of results over other types of closed or more chaotic structures such as the ones currently in place (efficiency-driven or organised anarchy), which would facilitate the development of the institution for innovation [48,61,69]. This is the case of UPO's Faculty of Social Sciences. Through leadership and integrated management when creating and accrediting its qualifications by means of quality systems within the Bologna process, the institution integrated into the day-to-day running of the Faculty the development and monitoring of curriculums, teacher training with coordination groups such as the Pedagogical Learning Communities [41]; as well as innovation through the incorporation and contributions of external agents such as experts and professional associations in all processes [21,47].

Within this context of Cybersociety and universities as networked social cyberorganisations, universities not only have to embark on internal reorganisation and restructuring; they must also tackle the need to link these internal processes directly with the demands of the surrounding environment.

This will feed not only into the training and education of students, ensuring it is up to date and relevant, but will also enhance the employability and entrepreneurship of their students [53,70]. At a micro level, we have the E-QUIPUS experience run by PUCP in Peru. These interdisciplinary groups of students and teachers use practices regulated in the curriculums in a structured and coordinated way to respond to the demands of the socio-productive environment, fostering entrepreneurship among students and their subsequent employability. This is all linked to the level of social responsibility universities must develop as institutions, thereby guaranteeing their sustainability. Many of the students who have taken part in E-QUIPUS are now university teachers and/or political leaders, social leaders, and members of the productive fabric of society with their own businesses, continuing to participate in the project albeit it with a different profile and in different cities (expansion), supporting current students, just as they received support when they were students [22].

Each of these three successful experiences represents one of the organisational levels, which universities must tackle when undertaking the now urgent process of restructuring. It should be noted that these changes and structural innovations would not have been possible without a cultural change, in which leadership assumed its role as a cultural model, supporting innovative members of the organisation, achieving effective results, and through the creation of a common, participatory culture of social involvement and inclusion. These university cyberorganisations will also bring with them a new cyberculture within universities, which will lay the foundation for consolidating this holistic cultural change [24,48,56], strengthening them through sustainability [4,23].

If universities wish to respond to the new context of COVID-19, virtualisation, and Cybersociety and become sustainable socially responsible organisations working to combat new technological and social divides within the framework of new university governance, not only is a change in leadership required, along with reorganisation and restructuring; there must also fundamentally be a change in the values and culture of members of universities [11,22,54,71–73].

Author Contributions: Conceptualization, G.D.-F. and E.P.-J.; methodology, E.P.-J.; investigation, G.D.-F., E.P.-J., P.B. and E.I.; writing—review and editing, E.P.-J.; all authors equally contributed to this article. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by CORFO (Corporation for the Improvement of Production of the Chilean Ministry of the Economy), €16.5 million; EUROPEAN FUNDS UNDER THE EU CONVERGENCE PROJECT, €35,000; and PONTIFICAL CATHOLIC UNIVERSITY OF PERU, \$120,000.

Conflicts of Interest: The authors declare no conflicts of interest.

References

1. Jones, S.G. *Cibersociedad 2.0.*; UOC: Barcelona, Spain, 2003.
2. Lombardero, L. *Trabajar En La Era Digital. Tecnologías Y Competencias Para La Transformación Digital*; Editorial Empresarial: Madrid, Spain, 2015.
3. UNESCO. *COVID-19 Y Educación Superior: De Los Efectos Inmediatos Al Día Después*; IESALC: Miranda, Venezuela, 2020.
4. Ramos Rodríguez, A.E. La integración universidad–gobierno–comunidad una necesidad para el desarrollo municipal sostenible. *Revis. De Gest. Del Conoc. Y El Desarro. Local* **2019**, *6*, 1–11.
5. David, M.L. La generación de nuevas funciones y roles en las estructuras universitarias y su relación con la sustentabilidad. *Doc. De Trab. De Investig. De La Fac. De Cienc. Econ.* **2019**, *3*, 1–25.
6. Meneses Guzmán, M.; Hernández Granados, J.B. Industria 4.0. Transformación digital, un cambio en el que participamos todos. *Investig. TEC* **2020**, *37*, 1–23.
7. Fernández, P.V.; Pinargote Montenegro, K.G. El impacto de la brecha digital en los procesos de enseñanza y aprendizaje en la universidad laica Eloy Alfaro de Manabí. *REFCaE Rev. Electrón. Formación Y Calid. Educ.* **2019**, *7*, 1–14.
8. Quintana Avello, I. Covid-19 y Cierre de Universidades ¿Preparados para una Educación a Distancia de Calidad? *Rev. Int. De Educ. Para La Justicia Soc.* **2020**, *9*, 1–11.

9. Ganga-Contreras, F.; Suárez-Amaya, W.; Calderón, A.; da Silva, M.; Jung, H. Retos a la Gobernanza Universitaria: Acotaciones sobre la Cuestión de la Autoridad y la Profesionalización de la Gestión de las Universidades. *Front. J. Soc. Technol. Environ. Sci.* **2019**, *8*, 435–456. [CrossRef]
10. UN. Resolution A/RES/70/1. *Transformar Nuestro mundo: La Agenda 2030 para el Desarrollo Sostenible*. Resolution Adopted by the General Assembly on 25 September 2015. Available online: <https://undocs.org/en/A/70/PV.4> (accessed on 12 May 2020).
11. Álvarez, M.F.; Zepeda, A.J.; Mendosa, C.S.; García, D.H. *Responsabilidad Social Universitaria En Desarrollo Sostenible Redes Universitarias De Argentina, Chile Y Colombia*; XIX Colóquio Internacional de Gestao Universitária; UFSC: Santa Catarina, Brazil, 2019.
12. CIOE-UNED. *Actas Del XII Congreso Interuniversitario De Organización De Instituciones. Simposium IV: Ciberorganizaciones Y Espacio De Colaboración*; CIOE-UNED: Madrid, Spain, 2015.
13. Levy, P. *Cibercultura, La Cultura De La Sociedad Digital*; Anthropus: Barcelona, Spain, 2008.
14. Pirela, J. Un sistema conceptual-explicativo sobre los procesos de mediación en las organizaciones de conocimiento de la cibernsiedad. *Rev. Int. De Bibliotecol.* **2006**, *29*, 103–122.
15. Wissema, J.G. *Towards the Third Generation University: Managing the University in Transition*; Edward Elgar Publishing: Cheltenham, UK, 2009.
16. Drucker, P. *Las Nuevas Realidades*; Edhasa: Barcelona, Spain, 1989.
17. Nonaka, I.; Takeuchi, H. *The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation*; Oxford University Press: New York, NY, USA, 1995.
18. Ramírez, C.; Cáceres, S.; Casas, A.; Rivera-Soto, J.; León, N.; Gallardo, M.; Flores, A. *Articulando Universidad, Comunidad y Territorio*; Ediciones UVM: Valparaíso, Chile, 2019.
19. Vázquez-Cano, E.; Gómez-Galán, J.; Infante-Moro, A.; López-Meneses, E. Incidence of a Non-Sustainability Use of Technology on Students' Reading Performance in Pisa. *Sustainability* **2020**, *12*, 749. [CrossRef]
20. Bricall, J.M. Tendencias recientes en las universidades. *Cult. Econ.* **2019**, *25*, 29–34.
21. Cuadrado Barreto, G.C. La gestión del conocimiento de la universidad: Modelo de evaluación MGCU. *Rev. Educ. Super. Y Soc.* **2020**, *32*, 89–114.
22. Artigas Pérez, E.; Ramos Rodríguez, A.E.; Fundora Simón, R.A. La responsabilidad social universitaria: Camino hacia el desarrollo sostenible. *Estrateg. Y Gest. Univ.* **2019**, *7*, 64–73.
23. Vélaz, I. Sistematizar la innovación en las organizaciones. De ser innovador a innovar de manera sostenida y sostenible. *Rev. Empresa Y Humanismo* **2014**, *18*, 55–79.
24. Domínguez Moreno, M.C. La Cibernsiedad: Modelo por Competencias Digitales y Desafío en la formación Profesional del Profesor Universitario. *Rev. Sci.* **2019**, *4*, 312–328. [CrossRef]
25. Florez-Parra, J.M.; López-Pérez, M.V.; López-Hernández, A.M. El gobierno corporativo de las universidades: Estudio de las cien primeras universidades del ranking de Shanghai. *Rev. De Educ.* **2014**, *364*, 170–196.
26. González, V.; García-Ruiz, R.; Aguaded, I. La formación en competencias mediáticas: Una cuestión de responsabilidad ética en educación superior. *Rev. Int. De Formación Del Profr.* **2014**, *79*, 17–28.
27. Hernández-Gracia, J.F.; Avendaño-Hernández, V.; Buitrón-Ramírez, H.A. Las Tecnologías de la Información y Comunicación y la Brecha Digital: Una nueva forma de exclusión social. *Bol. Cient. De La Esc. Super. Atotonilco De Tula* **2019**, *6*, 32–36. [CrossRef]
28. Global Innovation Index. *GII 2016 Report*; GII Co. Publishers: London, UK, 2016.
29. Cabero, J. Innovando en educación: La utilización de nuevos escenarios tecnológicos. *Organ. Y Gest. Educ.* **2015**, *23*, 14–18.
30. Salinas, J. Innovación docente y uso de las TIC en la enseñanza universitaria. *Rev. Univ. Y Soc. Del Conoc.* **2004**, *1*, 1–16.
31. Osorio Gaviria, L.A.; Restrepo Monsalve, L.M. Nuevos retos para la educación del siglo XXI. *Rev. Reflex. Saberes* **2019**, *10*, 25–32.
32. Gewerc, A.; Montero, L.; Lama, M. Colaboración y redes sociales en la enseñanza universitaria. *Comunicar* **2014**, *43*, 55–63.
33. Olivares, B.; Cortez, A.; Muñetones, A.; Casana, S. Elementos estratégicos de la gestión del conocimiento organizacional para la innovación. Caso: Red de agrometeorología. *Rev. Digit. De Investig. En Docencia Univ.* **2016**, *10*, 68–81. [CrossRef]
34. González-Ledesma, M.A. Nuevas formas de gobernanza en la educación superior latinoamericana: Chile, Argentina y México. *Bordón* **2014**, *66*, 137–150.

35. Lloyd, M. *Desigualdades Educativas y La Brecha Digital En Tiempos De COVID-19*; IISUE: Ciudad de México, Mexico, 2020.
36. Staricco, J.I. Estudio de caso: Una aproximación dialéctica. *Rev. Latinoam. De Metodol. De Investig. Soc.* **2018**, *16*, 8–21.
37. Ruiz-Ballesteros, E. Etnografía para la complejidad. *Gaz. De Antropol.* **2017**, *33*, 1–12.
38. González-Garay, A.; Díaz-García, L.; Chiharu-Murata, A.; Anzo-Orsorio, A.; García de la Puente, S. Generalidades de los estudios de casos y controles. *Acta Pediatr. De México* **2018**, *39*, 72–80.
39. Jiménez Collante, A.; Villanueva Flores, M. Los estilos de liderazgo y su influencia en la organización: Estudio de casos en el Campo de Gibraltar. *Rev. De La Agrup. Joven Iberoam. De Contab. Y Adm. De Empresa* **2018**, *18*, 183–195.
40. Domínguez-Fernández, G. (Ed.) *Transcender Bolonia a Través De La Innovación: Más Allá De Un Reto Burocrático*; Octaedro: Barcelona, Spain, 2016.
41. Escudero, J.M. Comunidades Docentes de Aprendizaje, Formación del Profesorado y mejora de la educación. In *Ágora for Physical Education and Sport*; Faculty of Education and Social Work: Valladolid, Spain, 2009; Volume 10, pp. 7–31.
42. Prieto-Jiménez, E.; Domínguez-Fernández, G.; Cobos Sanchiz, D. Assessment of competences: Social Education Degree Course run by Pablo de Olavide University, Spain. *Rev. Espac.* **2018**, *30*, 4–11.
43. Torres Barzabal, L.; Morón Marchena, J.A. *Innovación Docente: Experiencias Universitarias En Educación Social*; Octaedro: Barcelona, Spain, 2020.
44. IESALC-UNESCO. Nuevos retos para la educación del siglo XXI. *Rev. Reflex. Saberes* **2020**, *10*, 25–32.
45. Xarles i Jubany, G.; Martínez Samper, P. Docencia no presencial de emergencia: Un programa de ayuda de emergencia en el ámbito de la educación superior en tiempos de la COVID-19. *Análisis. Carol.* **2020**, *32*, 1–12. [[CrossRef](#)]
46. Alcántara Santuario, A. *Educación Superior Y COVID-19: Una Perspectiva Comparada*; IISUE: Ciudad de México, Mexico, 2020.
47. Novo, M.; Gancedo, Y.; Vázquez, M.J.; Marcos, V.; Fariña, F. Relationship Between Class Participation and Well-Being in University Students and the Effect of COVID-19. Paper Presented at 12th Annual International Conference on Education and New Learning Technologies (EDULEARN20), Online Conference, 6–8 July 2020; Available online: <https://iased.org/edulearn/> (accessed on 12 May 2020).
48. Leach, W.D. *Shared Governance in Higher Education: Structural and Cultural Responses to a Changing National Climate*; Center for Collaborative Policy California State University: Sacramento, CA, USA, 2008.
49. Spanier, G. Creating adaptable universities. *Innov. High. Educ.* **2010**, *35*, 91–99. [[CrossRef](#)]
50. Castro, D.; Ion, G. Dilemas en el gobierno de las universidades españolas: Autonomía, estructura, participación y desconcentración. *Rev. De Educ.* **2011**, *355*, 161–183.
51. Castro, R.J.; Valdivia, J. Propuesta metodológica de un sistema integral de gestión universitario. *Rev. De Adm. De Negoc.* **2012**, *1*, 73–92.
52. Torrecillas, C. *El Reto De La Docencia Online Para Las Universidades Públicas Españolas Ante La Pandemia Del COVID-19*; ICEI: Madrid, Spain, 2020.
53. Toakley, A.R. Globalization, sustainable development and universities. *High. Educ. Policy* **2004**, *17*, 311–324. [[CrossRef](#)]
54. Rodríguez-Espinar, S. El gobierno de las universidades de la reflexión a la acción. *Bordón Rev. De Pedag.* **2014**, *6*, 89–105.
55. OECD. *Tertiary Education for the Knowledge Society*; OECD: Paris, France, 2008.
56. Torrecilla García, J.A.; Pardo Ferreira, C.; Rubio Romero, J.C. Industria 4.0 y transformación digital: Nuevas formas de organización del trabajo. *Rev. De Trab. Y Segur. Soc. CEF* **2019**, *1*, 27–54.
57. Lora, P.; Rocha, D. Promoción de la innovación social a través de la utilización de metodologías participativas en la gestión del conocimiento. *Equidad Desarro.* **2016**, *25*, 159–178. [[CrossRef](#)]
58. Gregorutti, G. Buscando modelos alternativos para la gestión universitaria latinoamericana. *Bordón Rev. De Pedag.* **2014**, *66*, 123–136. [[CrossRef](#)]
59. Kehm, B. (Ed.) *La Nueva Gobernanza De Los Sistemas Universitarios*; Octaedro: Barcelona, Spain, 2012.
60. Etzkowitz, H.; Leydesdorff, L.A. *Universities and the Global Knowledge Economy: A Triple Helix of University-Industrygovernment Relations*; Faucheux & Howell: Londres, UK, 1997.

61. Domínguez-Fernández, G. Las redes holónicas y el desarrollo institucional: La reestructuración de los centros (estructuras multifuncionales y polivalentes) como necesidad para responder a la diversidad. *Profr. Rev. De Curric. Y Formación Del Profr.* **2001**, *5*, 45–66.
62. Baker, D.; Wiseman, A. *The Worldwide Transformation of Higher Education*; Emerald Group Publishing Limited: Bingley, UK, 2008.
63. McHugh, P.; Merli, G.; Wheeler, W.A. *Más Allá De La Reingeniería Empresarial*; Ediciones Díaz de Santos: Madrid, Spain, 1998.
64. Bautista, J. (Ed.) *Innovación En La Universidad. Prácticas, Políticas Y Retóricas*; Graó: Barcelona, Spain, 2012.
65. Johnson, S. *Las Buenas Ideas. Una Historia Natural De La Innovación*; Turner: Madrid, Spain, 2011.
66. Hannan, A.; Silver, H. *La Innovación En La Enseñanza Superior*; Narcea: Madrid, Spain, 2005.
67. Lester, R.; Piore, M. *Innovation: The Missing Dimension*; Harvard University Press: Cambridge, MA, USA, 2004.
68. Ferrer, M.F. La influencia del factor humano, el liderazgo y la cultura de las organizaciones en los procesos de implementación y gestión del cambio organizacional. *Rev. Int. De Investig. En Cienc. Soc.* **2015**, *11*, 102–114. [[CrossRef](#)]
69. De-Boers, H.; Enders, J.; Schimank, U. Hacia Una Nueva Gestión Pública? La Gobernanza De Los Sistemas Universitarios En Inglaterra, Los Países Bajos, Austria Y Alemania. In *La Nueva Gobernanza De Los Sistemas Universitarios*; Kehm, B., Ed.; Octaedro: Barcelona, Spain, 2012; Volume 1, pp. 193–214.
70. Martínez-Carrasquero, C. Responsabilidad social universitaria y su articulación con las funciones de docencia-investigación y gestión, para su vinculación con el entorno social. *Bol. IESALC Inf.* **2011**, *214*, 1–2.
71. Pagés, T.; Hernández, C.; Abadía, A.R.; Bueno, C.; Ubieto-Artur, I.; Márquez, D.; Sabaté, S.; Jorba, H. La innovación como competencia docente en la universidad: Innovación orientada a la mejora de aprendizaje. *Rev. De Psicol. Ciènc. De L Educ. I De L Esport* **2016**, *34*, 22–35.
72. Prieto-Jiménez, E.; Torres-Barzábal, L.; Cobos-Sanchiz, D. Las Comunidades Pedagógicas De Aprendizaje En El Grado De Educación Social. In *Transcender Bolonia A Través De La Innovación: Más Allá De Un Reto Burocrático*; Domínguez-Fernández, G., Ed.; Octaedro: Barcelona, Spain, 2016.
73. Mancilla Rendón, M.E.; Camarena Adame, M.E.; Farias Martínez, G.M. Hacia una cultura de la sustentabilidad en las Universidades. *Rev. Latinoam. De Investig. Soc.* **2019**, *2*, 1–23.



© 2020 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).