



unesco

International Institute
for Higher Education
in Latin America and
the Caribbean



**Proposed conceptual framework and implementation strategy
for digital hubs in strategic regions of Peru**

June 15, 2021

Published in 2021 by the United Nations Educational, Scientific and Cultural Organization, 7, place de Fontenoy, 75352 Paris 07 SP, France and UNESCO International Institute for Higher Education in Latin America and the Caribbean (IESALC)

© UNESCO IESALC 2021

Document code: ED/HE/IESALC/IN/EN/2021/08



This publication is available in Open Access under the Attribution-ShareAlike 3.0 IGO (CC-BY-SA 3.0 IGO) license (<http://creativecommons.org/licenses/by-sa/3.0/igo/>). By using the content of this publication, the users accept to be bound by the terms of use of the UNESCO Open Access Repository (<http://www.unesco.org/open-access/terms-use-ccbysa-en>).

The designations employed and the presentation of material throughout this publication do not imply the expression of any opinion whatsoever on the part of UNESCO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

The ideas and opinions expressed in this publication are those of the authors; they are not necessarily those of UNESCO and do not commit the Organization.

Cover picture from [pexels.com](https://www.pexels.com/). No known copyright restrictions.

Content

Introduction	4
I. Technological Strategies	5
II. Table: Summary of Digital Hub Models	7
III. Digital Hubs	9
1. Community Centers	9
a. Mexico: Community Learning Center - CCA.....	10
b. Ecuador: Community Infocenters	15
c. Peru: Country Program "Tambos"	18
d. Canada: Community Hubs.....	19
e. United Kingdom: Community Hubs	20
2. Internet Centers	22
a. Colombia: Digital Centers	22
3. Digital Points with internet access.....	24
a. Chile: "Zona Wifi"	24
IV. Student Support Centers	26
1. Learning Resources Centers / Teaching and Learning Resources Center	28
2. Psychological counselling.....	31
3. Career Guidance.....	33
V. Peru: Implementation Proposal.....	35
1. Educational Community Support Center	37
1.1 IN-HOUSE Phase.....	38
Services Design Phase	41
1.2 EXPANSION Phase	42
Stages for EXPANSION Phase	43
1.3 Adequacy of Physical Resources for Educational Community Support Centers: IOARR	44
VI. References	46

Introduction

The National Policy for Higher and Technical Productive Education (PNESTP) contemplates six priority objectives¹. However, the preparation of this document focuses on the first one "To increase equitable access of the population to higher and technical-productive education". The situation in Peru in this regard is quite serious: only three out of every ten students who have completed basic education, have access to higher education; or worse, only two out of every ten young people from the lowest quintile of household per capita expenditure, have access to higher education (Ministry of Education, 2020).

The measures undertaken by the Peruvian Ministry of Education are diverse and span strengthening vocational guidance, identifying the potential of students, implementing support mechanisms and optimizing their function.

It is within the framework of the implementation of support mechanisms that the idea of Digital Hubs and their different models (Community Centers, Internet Centers and Digital Points) was conceived, as spaces for technological support and support to higher education students. This document proposes international experiences as well as the relevance of Student Support Centers (Learning Resources Centers / Teaching and Learning Resources Center, Psychological Accompaniment, Professional Orientation).

The above information is relevant since it serves as the basis for the development of the implementation proposal "Educational Community Support Center" for DIGESU-MINEDU. The proposal comprises two implementation phases: IN-HOUSE (within the higher education institutions themselves) and the EXPANSION phase (spaces external to the higher education institution, expected to drive the promotion of equitable access in Peruvian higher education).

¹ Increase Equitable Access, provide Comprehensive Training, promote Teaching Performance, improve the Quality of Institutions, articulate Quality Assurance and improve Resource Mobilization.

I. Technological Strategies

Societies have been affected by various changes in recent years stemming from the introduction of information and communication technologies (ICTs) in everyday life. This has generated opportunities for improvement in various areas of life, including the way people interrelate, political practices, cultural practices, and teaching and learning methods (Girardo & Saenger, 2007). The transformations that are occurring, as a result of these opportunities for improvement, translate into economic and productive development and the re-modeling of behaviors (practices and habits).

At the same time, these processes have widened the gaps between countries and their capacity to adapt to these new changes and enjoy their benefits. In this scenario, countries have developed programs and policies aimed at supporting the new paradigm. These initiatives involving strategies for public and shared use of ICTs appear to be successful in reducing the digital divide in Latin American and Caribbean countries (Girardo & Saenger, 2007). Several studies show that public and/or private initiatives such as "Digital Centers" (spaces for access to and shared use of ICTs) help to provide access and connectivity for people living in areas where the availability of technologies is a challenge, as is access to public and/or basic services.

Several international initiatives are currently being deployed to support and meet the demand for the necessary steps to be taken to bring citizens, in this case students, closer to the public higher education service.

However, with the advent of COVID-19, the rules of the game have changed and processes and initiatives that were expected to develop later, are happening today. The pandemic has accelerated the development of processes for the provision of government services, and the education sector has been no exception, bringing remote education to students at all levels in record time.

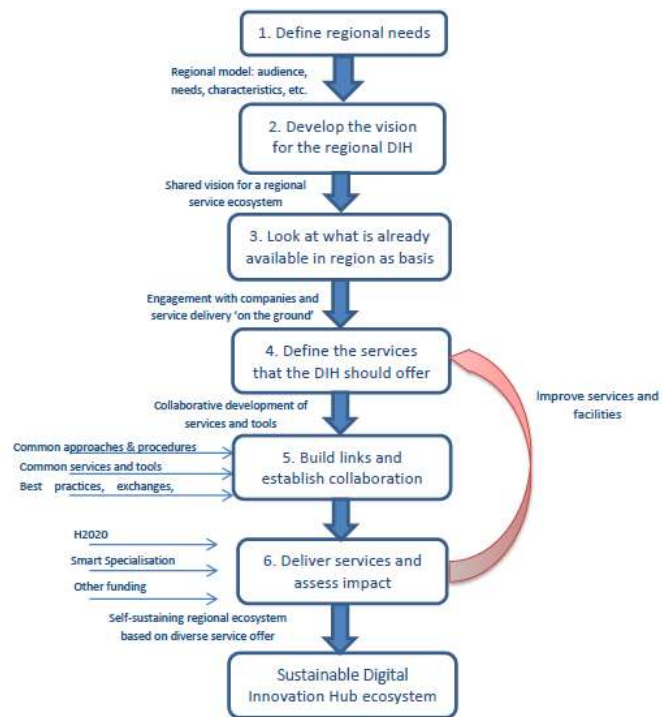
Among the various initiatives that are being deployed at the international level, one of the most important is that of Digital Hubs. The European Commission at the Roundtable on Digitising

European Industry defines the Digital Hub as: "a support center that helps companies to be more competitive through the improvement of their business, services production, products, services using digital technology" (European Commission: Smart Specialisation Platform, 2017). Although this document expects to address solutions for improvement in the public sector, the definition of Digital Hubs proposed by the European Commission is fully adaptable to government. In other words, when we refer to a support center, we can contemplate a community center where technology is applied for the provision of the proposed services (in the case of Peru: internet access and facilities required by citizens). Nowadays, governments worldwide are in a process of innovation of their processes, services, methodologies and policies: they want to create value for the public². All of this in order to be more competitive internally and externally as a country, and promote efficient economic and social development.

Although there is no one concrete way to create a Digital Hub, considering the different contexts in which these initiatives are implemented, there are proposals such as the one recommended by the Roundtable on Digitising European Industry, which can be considered an innovation process. The proposal consists of six steps:

² Public Value understood as the way to measure progress through the achievement of social objectives (e.g. the achievement of moving to a low carbon economy only). Such objectives can be achieved only through collaboration between the private and public sectors working together to co-create and co-design markets.

Digital Hub creation process



Source: Roundtable on Digitizing European Industry 2017

II. Table: Summary of Digital Hub Models

The following is a summary of Digital Hubs models, found internationally, with their respective characteristics.

Table: Summary of Digital Hub Models

Model	Country	Initiative	Services promotion (Education, Health, Wellness, Employability, Technology)	Stakeholders involved
Internet Hot Spots Community Centers	Colombia	Digital spaces	- Free internet access points	- Ministry of Information Technology and Communications
	Chile	Wifi Zone	- Free internet access points	- Telecommunications Subsecretariat - Regional and local governments
	USA	Learning Centre CT	- Digital resources for facilitating online learning and equality	
Internet Hot Spots Model Community Centers Model	Canada	Community Hub	- Health and Social Services - Municipal Services - Complementary Services: training and inclusion programs for post-secondary institutions.	- Strathcona County - Participating Organizations - Community
	UK	Libraries as community centres	- Health Center - Employment assistance, skills development. - IT access - Career services, links to local universities or HEIs - Facility for entrepreneurs	- Public sector community hubs: managed by an authority, housing association or other public sector organization - Community hubs managed by a community organization: different projects, activities and services. Usually managed with a high level of involvement of a local authority
	Australia	Schools for community centres	- Student and Parent Involvement Programs - Safety, health, education and sports programs	- Government Agency Task Force - Local government - Associations - Community representatives
	Ecuador	Community Infocentres	- Training in the use of ICT - Productive enterprises - Use of government services - Internet access	- Ministry of Telecommunications and the Information Society - National Telecommunications Corporation EP - Private Non-Profit Organizations - Communities
	Mexico	Community Learning Centres- CCA	- Access to computers and Internet - Advice on how to carry out certain procedures or formalities - Training courses	- Promoters - Educational Institutions - Civil Society Organizations - CSOs - City Hall / - Local grassroots committee - Social Promoter for SEDESOL ³ - Coordinator of Micro-regions - Manager of the CCAs
Internet Hot Spots	Colombia	Digital Centers ⁴	- Internet access - Training courses - Business ventures - Online Operations	- Ministry of Information Technologies and Communications - Private sector companies that provide the service in the Digital Centers.

³ Ministry of Social Development

⁴ Expected to start operating by mid 2021, so it is not clear at this time whether all the services proposed will be provided.

III. Digital Hubs

Several models of Digital Hubs exist globally, but in each region they have developed in different ways. In Latin America we can find those that only provide internet as connection points to a certain number of people (e.g. Chile); others that seek to provide internet access through digital centers, but benefiting not only the educational institution but also the surrounding communities (e.g. Colombia); and then there are the most robust cases where the decision was taken to merge internet access with capacity building and improvement of opportunities through different types of courses, training, and the specialized attention of a "Promoter" as "is provided at Community Centers" (e.g. Mexico and Ecuador).

Cases similar to the Community Centers (CC) can be seen in Canada with the Community Hubs where various services are provided (social, health, educational and employability) and which may even be physically located in health centers and/or schools. The United States has CT Learning Hubs where basically digital resources are provided to facilitate online and offline learning.

In Europe, specifically in the UK, the model is Community Centers (often located in libraries) that provide a range of services: health and welfare, employment (employment assistance, training programs, space for entrepreneurs, etc.) and services for children and adolescents (career services, and links with local universities or HEIs).

In Oceania, Australia has schools serving as community centers where they provide a range of services and activities, outside school hours, to meet the needs of children and adolescents, their families and the community as a whole.

1. Community Centers

Community centers are being deployed in various countries in the Americas, Europe and Oceania. Although there are certain differences in their operations according to the countries in which they operate, their similarities are greater, and this accounts for their success today. Here below is a

presentation of the cases found and the most relevant information for their management and development.

a. [Mexico: Community Learning Center - CCA](#)

Public Policy

In the case of Mexico, the Community Learning Centers (CCA) initiative is part of the federal policy "National e-Mexico System" (SNe-M), which stems from the federal public policy that aims to propel the country towards what is known as the Information and Knowledge Society (SIC). The CCAs are facilities for developing skills and capacities through the use of computers with internet access. This center mainly caters to the population living in marginalized areas of Mexico, and provides formal education courses and professional courses, which would otherwise be more difficult to access ([SEDESOL :: Microregions Unit :: UMR](#)). In order to achieve this, it is critical to ensure people's access and education.

It is important to note that the political vision proposed at that time was that all Mexicans would develop in an environment of equal opportunities of access to knowledge, learning and education, through the use and application of Information and Communication Technologies, which would be at the service of society (Girardo & Saenger, 2007).

The policy proposed would apply to four areas: e-Learning; e-Health; e-Economy and e-Government. For this purpose, it had to be based on three transversal variables such as connectivity, content and systems (Girardo & Saenger, 2007). For the CCAs, the connectivity strategy was developed directly through the installation of Digital Community Centers and satellite networks (especially for families with access difficulty, due to geographical and economic limitations (Universidad Virtual del Tecnológico de Monterrey, 2005); and indirectly, applied to the CCAs, the systems strategy through electronic services that are available through computer equipment and the Internet, through which the population can access the contents available on the world wide web (Girardo & Saenger, 2007). The third strategy was the content strategy and consisted of the creation of learning contents on health, economy and government.

IN the specific case of e-Learning, the Internet and ICTs were considered a relevant aspect for education. It should be noted that important institutions such as: public organizations, for example, the National Autonomous University of Mexico (UNAM); the National Council of Science and Technology (CONACyT); the National Association of Universities and Institutions of Higher Education (ANUIES); and the National Council of Education for Life and Work (CONEVyT), as well as private institutions such as the Technological Institute of Higher Studies of Monterrey (ITESM) (Girardo & Saenger, 2007), participated in the CCAs (Girardo & Saenger, 2007).

The CCAs have been nurtured by some of the activities that these institutions have developed, such as: educational portals, online courses and training, use of the Internet and use of ICTs to teach courses and develop virtual universities (Girardo & Saenger, 2007). But perhaps the institution with the greatest relevance in the development of the Community Centers is the ITESM, which has designed and created the structure that supports the CCAs, producing the contents and the web platform, and promoting their expansion.

The CCAs evolved within the framework of different public (Government and National e-Mexico System) and private (ITESM) organizations in Mexico. They were joined by the Ministry of Social Development (SEDESOL) (which proposed the creation of these centers in its Microregions Unit, which has managed to locate the CCAs in municipalities of high and very high social marginalization, generally in rural areas) through an agreement with ITESM, which led to the installation of CCAs throughout the country.

Objectives

The objectives of the CCAs are: ([SEDESOL :: Microregions Unit :: UMR](#))

- To contribute to the reduction of the digital divide through the use of technological tools for the inhabitants of less developed and geographically isolated areas.
- To access the offer of Training Courses for Life and Work, developed by various institutions, and oriented to develop skills for work and improve the quality of life.

- To stimulate the capabilities and technical skills of the inhabitants of marginalized areas, in order to contribute to the economic growth of their regions.
- To provide access to the historically marginalized population to a window with the programs and support offered by the federal government to promote productive and strategic projects for the development of their communities.
- To promote community development in three dimensions: human, social and economic through knowledge disseminated in the network.

Over time, it became clear that the people who made the most use of the CCAs were of all ages, but primarily school-age children and adolescents. In general, the users were people with access difficulties and who were coming from complex geographic locations.

Mode of operation

The CCAs work hand in hand with eight stakeholders ([SEDESOL :: Microregions Unit :: UMR](#)):

- Promoter: person responsible for managing resources and coordinating the center's activities (dissemination strategies and promotion of activities). Maintains a close relationship with the local community, promotes its participation, facilitates educational content and supports users in searching for information on the Internet.
- Educational Institution: provides educational offerings (tutorials, self-study courses, workshops, high school and higher education).
- Civil Society Organizations (CSOs): in order for the community to take ownership of the CCAs, the CSOs are in charge of managing collaboration agreements that promote actions to improve the quality of life of the local inhabitants.
- Municipality: the body responsible for the installation and operation of the CCA, executing the initial economic resources granted by SEDESOL for its equipment.

The municipality assumes financial responsibilities through a Letter of Commitment.

- Local Committee at base: members of the community responsible for representing the community and supporting the promoter in decisions related to the CCA before the municipality and SEDESOL (they are elected in a Community Assembly); they ensure that the entire community has access to the CCA and protect the community's interests related to the CCA.

Actors at the state level:

- Social Promoter of SEDESOL: liaison person between the municipality and SEDESOL. He/she verifies that the Local Base Committee functions correctly and that the CCAs are properly managed.
- Coordinator of Micro-regions: responsible for negotiating jointly with those responsible for the CCAs, the establishment of agreements and/or arrangements with the state government, municipalities or private companies for the installation, operation and maintenance of the Centers.
- Responsible for the CCAs: responsible for coordinating, promoting and following up on the installation and operation of the CCAs in the entity.

Like any other facility, the CCAs have had several problems: legal-administrative problems (disputes between government entities and logistical operations of civil society organizations); typical communication problems within the state structure and with other actors; difficulty with collaborative work; political problems (local governments often see the CCAs as a budgetary burden); rotation of promoters resulting from changes in municipal authorities; delays in payment of basic services and typical problems in infrastructure and connectivity (Girardo & Saenger, 2007).

Services and/or Courses

The services provided by the CCAs are:

- Access to computers and Internet: e-mail, web applications and chat.
- Advice on the completion of certain formalities or procedures (such as the CURP, the drafting of official documents and the printing of materials) and virtual libraries.
- Access to a range of training courses on various topics online; high school, undergraduate and face-to-face courses and workshops.

As mentioned above, ITESM develops and coordinates the educational offerings through its Web Tec distance education platform, which can be tutored (obtaining diplomas) or not (self-study).

Currently, through the website [CVA - Virtual Learning Center \(centrocomunitariosdeaprendizaje.org.mx\)](http://centrocomunitariosdeaprendizaje.org.mx) more than 200 online self-study courses can be taken, which in some cases are led by the students of ITESM.

Available courses are usually:

- Statistics.
- Specialized courses for CCA Promoters.
- Legal courses (for those with entrepreneurial objectives).
- Courses on safety indicators for the construction trade.
- Basic Computer Skills Courses.
- English Language Courses.
- Courses on HTML programming and Web page creation.
- Courses on teaching.
- Courses on reinsertion in educational practice.

The CCAs currently have more than 400,000 registered users, more than 200 educational materials and more than 500 videos on conferences available to users.

b. Ecuador: Community Infocenters

Public Policy

In 2008, in Ecuador, the Buen Vivir (Good Living) Policy (integrated into the Ecuadorian Constitution) was established by the Constituent Assembly. This policy aims to map a path to achieving an information and knowledge society, not only to promote the long-awaited economic growth, but also to provide equal access to opportunities, citizen participation, digital inclusion and reduction of the digital divide. (Yaulema Zavala & Blanco Encinosa, 2017). This is why the Buen Vivir policy is about all Ecuadorian citizens enjoying universal access to ICTs. This makes the state responsible for "incorporating information and communication technologies in the educational process and fostering the link between education and productive or social activities" (República del Ecuador, 2009). This policy has not become outdated over time as even the Ministry of Telecommunications and Information Society - MINTEL, in 2016, had institutional strategic objectives for Infocenters such as the increase in the number of included citizens and literate persons. The Infocenters also contribute to the fulfillment of objectives of the National Plan for Good Living 2013-2017 (Ministry of Telecommunications and Information Society, 2021).

In this way, in order to promote productive and social activities, the Community Infocenters⁵ became participation and meeting spaces where access to Information and Communication Technologies (ICT) is guaranteed, contributing to the reduction of the digital divide, promoting development, innovation and entrepreneurship (an economic value is created for the citizen), thanks to the use of ICT (Ministry of Telecommunications and Information Society - MINTEL, 2021).

Objectives

The strategic objectives of the Community Infocenters are to:

- Provide training in the use of ICT and promote productive enterprises.
- Promote the use of on-line government services.

⁵<https://www.google.com/maps/d/u/0/viewer?mid=1Aw2CxY1KPExf3iN-vRJkvmZyyYYIGwE9&ll=-1.837287761188168%2C78.21879669999998&z=7>

- Promote and exercise governance in the territory.
- Provide universal access to and democratize ICTs.
- Promote knowledge and use of ICTs to reduce the digital divide.
- Support the prevention of social problems.
- Encourage the development of technological projects and solutions.

Mode of operation

The Community Infocenters work hand in hand with four stakeholders (Ministry of Telecommunications and Information Society, 2021):

- Ministry of Telecommunications and the Information Society: responsible for monitoring operations, policies for the use of Infocenters, maximum use of investments, provision of training and education of facilitators, and digital readiness content.
- Nacional Telecommunications Corporation EP: responsible for furniture, equipment, connectivity, hiring of managers and facilitators. It is worth mentioning that it functions as an implementation unit.
- Private Non-Profit Organizations: responsible for allocating the physical spaces, payment of basic services, maintenance of the infrastructure and the security of the space.
- Community: direct beneficiaries, access to ICTs, can set up links with micro-enterprises and become digitally literate.

Services / Courses

In 2019, there were 861 Infocenters⁶ and 25 Mega Infocenters⁷ nationwide in Ecuador⁸, with Chimborazo being the province with the highest number of Infocenters (71) and Galapagos with the lowest number of Infocenters (2). Compare this number with that of 2015 with the largest number at the time: 262.

The services provided within the framework of the National Digital Readiness Plan (PLANADI)⁹ are diverse:

- Citizen training
- Access to e-Government services
- Internet access, computers, and digital infrastructure
- Printing and photocopying
- Communication channel between government institutions and the community
- School assignments
- Tourism promotion
- Introduction to ICT
- Office tools
- ICT for MSME businesses, artisans, children, tourism, agriculture
- Computer assembly and maintenance
- Digital Microentrepreneur.

To make use of the Infocenters and their courses, all that is required is an identity card and registration.

⁶See

at:<https://app.powerbi.com/view?r=eyJrIjoiYTc5MmUxOGQwMy00MWUzLTliNTU0NTdkNDYwYW5yZnNiliwidCI6IjY1MjcwMjNmLWU2ODAtNDU3MS1iY2EzLWVmNWQ5MmM5Nzc5NyIsImMiOiR9>

⁷ In addition to Infocenters, there are Megainfocenters, which are larger in size and in number of computers. Each megafocenter has 50 computers and is located in the capitals of provinces and cantons.
<https://infocentros.mintel.gob.ec/preguntas-frecuentes/>

⁸<https://app.powerbi.com/view?r=eyJrIjoiYTc5MmUxOGQwMy00MWUzLTliNTU0NTdkNDYwYW5yZnNiliwidCI6IjY1MjcwMjNmLWU2ODAtNDU3MS1iY2EzLWVmNWQ5MmM5Nzc5NyIsImMiOiR9>

⁹ <https://infocentros.mintel.gob.ec/capacitaciones-infocentros/>

At the community Infocenters, it is vitally important to promote entrepreneurship among citizens through access to free training in the promotion of business ideas, entrepreneurship and innovative projects, with the proper management and use of technologies, and the monitoring and support to achieve success (Ministry of Telecommunications and Information Society, 2021). This is why even now, in the highlands, on the coast and in the Amazon region, we can find entrepreneurs established in all areas.

c. Peru: Country Program "Tambos"

By virtue of Supreme Decree N 013-2017 - MIDIS, in 2017, the National Program "Action Platforms for Social Inclusion - PAIS" was established based on the Tambos National Program (El Peruano, 2017).

The National Program "Action Platforms for Social Inclusion – PAIS" is a Social Program attached to the Ministry of Development and Social Inclusion, aimed at improving the quality of life of the population living in poverty and extreme poverty, especially those settled in rural or dispersed rural population centers in the highlands and jungle, and contributing to their economic, social and productive development that is conducive to their social inclusion.¹⁰

Objective:

To improve the quality of life of the population living in poverty and extreme poverty, especially those living in rural or dispersed rural population centers in the highlands and jungle, and contribute to their economic, social and productive development that is conducive to their social inclusion.¹¹

¹⁰ <https://www.pais.gob.pe/webpais/public/inicio/que-es-el-programa-nacional-pais>

¹¹ <https://www.pais.gob.pe/webpais/public/>

Main elements:

- Currently present in 22 regions, through 468 Tambos¹² y 10 Pias¹³.
- Action plan is based on a lifelong Development and Social Inclusion Policy. It includes Education and Higher Education.
- All Tambos have the same characteristics. Approximately 2,000mt. The capacity is approximately 150 people¹⁴.
- The location of the Tambos is usually at the community level. Closer to district capitals and provincial capitals.
- The Tambos already have a defined infrastructure, but due to their conditions it is possible to annex another space if necessary.
- Tambos offer various services to citizens.
- The Tambos are managed by someone who is a "Gestor" (Manager). This person is hired directly by the Country Program with the responsibility to basically attend to the facility and be the intermediary (in terms of the management and nature of services and the administration) between the community and the PAÍS Program.
- There is an Operations Team that supports the "Gestor" in his work.
- The PAÍS Program has "SisMonitor", a system which standardizes actions and provides information on frequency and use of services, etc..

d. Canada: Community Hubs

Community Hubs serve as an access point to a list of health and social services, and cultural, recreational and green space needs for the development of community living. The Community Hub can be a school, a district center, an early childhood center, a bookstore or a government building. It can be rural or urban, located in a densely populated area, but it will be a Community

¹² <https://www.pais.gob.pe/webpais/public/>

Modern facilities located in rural areas. They are available for initiatives that offer services to communities and population centers.

¹³ Mobile platforms. These are aircraft and river vessels that travel the Amazon and Lake Titicaca basins to bring essential government services to native communities and populations in the upper Andes.

¹⁴ Due to the pandemic, the capacity has been reduced by 60%, which only allows 10-20 people to be present.

Hub as long as it is used by the local community and for the purpose of local needs, services and resources.

Community Hubs offer several benefits:

- Partnerships with different school communities
- Response to local needs
- More efficient and sustainable services
- Improved access to services and better individual achievement
- Return on social investment¹⁵

The benefits of Community Hubs are vast and what is clear is that this model envisions energy, leadership and creativity at a community level. In Ontario, communities with Community Hubs are creating unique solutions at a local level.

Objectives

There are three objectives:

- Coordinated planning: Coordinated planning system that promotes partnerships and decides the work to be done.
- Customer-centered service delivery: a delivery system that provides integrated services to people in communities.
- Community infrastructure: a system that maximizes the use of public property for community benefits.

e. [United Kingdom: Community Hubs](#)

Community Hubs, located in Libraries, are focal points that serve local activities, offers the use of services and facilities, and are accessible to the local community. They are multi-purpose and respond to local needs (Thomson & Murray-Sanderson, 2017).

¹⁵ The Beltline Aquatic & Fitness Center in Alberta had a return of \$4.84 for every dollar invested.

Traditionally, Community Hubs have 2 model types:

- a. **Community Hubs with public sector focus:** managed by a local authority or state organization, offering different services.
- b. **Community Hubs managed by a community organization:** have different projects, activities and services; usually managed with high degree of involvement of the local community; a place where persons have more freedom to organize themselves.

It should be noted that the management of these two models is not mutually exclusive.

Many studies were conducted on the additional services of the Libraries given the nature of the highly collaborative work with the public sector, the private sector and the local community.

Services / Courses

	What are they?	What do they offer?
Physical Spaces	Community Hubs can be in different types of buildings, in different areas/districts, whether rural or urban.	<ul style="list-style-type: none"> • Spaces to accommodate Library and services • Existing libraries • Libraries relocated to other spaces to offer services. • Smaller community centers where the library occupies a small space.
Associations	The Library can have different levels of importance in the Community Hub space.	<ul style="list-style-type: none"> • The Library itself is a Hub, and promotes partnerships. • The Library is one stakeholder among several others. • Integrated services with shared equipment and services in the Library.
Activities and services	The Community Hub can include different types of services and activities.	<ul style="list-style-type: none"> • Health and Wellness: access to support center for employability, skills development, Entrepreneurship Hubs, access to IT. • Children and Young persons: Children's Nursery, Career Service, Reading Groups, Volunteering, University Connections.

Source: Libraries as community hubs: Case studies and learning

Core Ideas

- The role of municipalities has changed: they no longer function as service providers, but as facilitators and conveners.
- The role of the community in the co-creation of services is fundamental. Residents ensure that solutions at the local level are well- developed.
- Digital opportunities are fully exploited: from local government to the development of platforms for citizens to access services remotely.
- More importance is given to a local approach in service delivery, alongside a community agenda that prioritizes individuals and communities in the decision-making power of central government.

2. Internet Centers

a. Colombia: Digital Centers

Public Policy

The Digital Centers initiative originated in the Ministry of Information and Communication Technologies and was submitted to the National Council of Economic and Social Policy (CONPES) as a Declaration of Strategic Importance of the National Project for Universal Access to Information and Communication Technologies in Rural or Remote Areas for consideration. (National Council of Economic and Social Policy - CONPES, 2021)

To date, the Digital Centers initiative is the largest connectivity project in Colombian history and it is estimated that it could cost more than 2 billion dollars.

The Digital Centers are centers where there is a plan to provide 24/7 Internet access service, installed mainly in public educational establishments and sites in rural and/or remote areas of the country (14,745 rural communities).

This project is relevant for the education sector as it is expected to connect 42% of the country's rural schools between 2021 and 2022. Access will be available to all members of the educational community and it is expected that students will be able to consult work online, access educational content that will strengthen their learning process, and conduct academic research, while teachers will be able to search for innovative teaching alternatives, prepare classes, and be in communication with other colleagues in Colombia and the world (Ministry of Information and Communication Technologies of Colombia, 2021).

The proposal is for the Digital Centers to have 2 WiFi wireless access zones (Ministry of Information and Communication Technologies, 2021):

- Internal: will benefit the public institution (60% of minimum connectivity will be for the use of Education sites during academic hours). The Wifi connection will be available 24 hours a day.
- External: will benefit the surrounding community (owners of mobile devices with WiFi) by providing free connectivity.

It should be emphasized that Colombia's technological strategy does not end with the installation of Digital Centers, for which an entire infrastructure is being developed, but is linked to the various digital programs of the Colombian Government: ICT Law, Connected Homes, Last Mobile Mile, Digital Zones, Vende Digital and ICT Mission 2022 (Abudein, 2021).

Objectives

The purpose of the "National Project for Universal Access to Information and Communication Technologies in Rural or Remote Areas" is to promote digital inclusion in rural areas by offering public Internet access to a minimum of 9,410 and a maximum of 10,000 population centers distributed throughout the 32 departments of the country, in order to guarantee access to connectivity in the long term and thus promote continuous processes of access and use of the service (National Council for Economic and Social Policy - CONPES, 2021).

Services and/or Courses

- Internet access
- Training courses
- Business ventures
- Online processes

3. Digital Points with internet access

a. Chile: "Zona Wifi"

Public Policy

The Chilean government's initiative "Zona Wifi" (Wifi Zone) is part of the public policy promoted by the Undersecretary of Telecommunications, through the Telecommunications Development Fund (FDT) to provide WiFi Telecommunications Services, free of charge, in different municipalities throughout the country.

Zona Wifi¹⁶ offers free internet access points for tablets, cell phones or personal computers in sessions of up to 30 minutes (there is no limit to the number of connection times). Up to 25 users can connect to the same WiFi hotspot. The Zona WiFi location is determined according to areas of high density population or social significance. It should be noted that by 2020, 1,244 ChileGov WiFi Zones will be operational in the 16 regions of the country.¹⁷

¹⁶ [Portal Zona WiFi Gob - Introducing the first public WiFi network of the Government of Chile](#)

¹⁷ https://www.subtel.gob.cl/wp-content/uploads/2020/07/Informe_Nacional_2T_2020.pdf

ChileGov WiFi amounts awarded as of July 2020

AMOUNT AWARDED							
YEAR OF IMPLEMENTATION	PROJECT PHASE	ChileGov WiFi Zones	Regions	Communes	Locations	Amount Subsidy \$	STATUS
2014-2015	WiFi 1	196	3	49	49	965.487.309	100% in service
2014-2015	WiFi 2	416	3	91	104	2.254.545.371	100% in service
2016	WiFi 3	348	6	84	87	1.871.045.724	100% in service
2016-2017	WiFi 4	225	11	76	76	2.562.864.884	100% in service
2016-2017	WiFi 5 Cultural Spaces	38	2	15	15	812.712.426	100% in service
2017-2018	WiFi Maule	21	1	4	15	255.940.000	100% in service
		1.244	15	* 319	346	8.722.595.714	

* The total number of communes considers that some of them are repeated in more than one Phase of the project.

Source: National progress report on telecommunications development fund projects.

Objectives

The aim of the "Zona Wifi" initiative is to reduce the digital divide in the most vulnerable areas of Chile where there are few connectivity options, by promoting the digital inclusion of citizens, and providing them with access to new technologies via Internet (Telecommunications Sub-Secretariat, Chile, 2020).

Mode of operation

This initiative does not have stakeholders working together to provide the Internet service or any other parallel operation (see previous examples).

Services and/or Courses

- Provides internet access to connection points and surrounding areas.

IV. Student Support Centers

In as much as new spaces for interaction and resources have emerged in higher education, so too have new needs arisen among the education community, and even more so among students. There are technological needs but there is also the importance of mental health¹⁸. Difficulties related to mental health can be found at any point in the professional career. Situations vary from person to person and are not necessarily all related to the experiences of higher education, although particular aspects can cause some stress to students at key moments of their university life such as at its commencement (Universities UK, 2015).

In the survey on students' perception of the quality of Higher Education at the University of Wolverhampton (United Kingdom), it was found that the most important factors to consider were: the quality of the lecturer, the quality of the curriculum, socio-emotional support systems, and Library and Information Technology resources (Hill, Lomas, & MacGregor, 2003).

To provide improvement niches for students, Higher Education Institutions have designed ad hoc services and there is already evidence of this globally, which indicates that there has been a positive impact (Prebble, et al., 2004). McInnis et al. (200b) provides a list of services used by university students in at least 7 Australian universities:

List of Services Used by First Year Students at Australian Universities

Child care	Support for international students
Pastoral/religious care	Women's resource/support center
English language resource/support services	Student housing service
Financial aid	Employment service
Counselling service	Study skills assistance
Health service	Student union clubs
Library support service	Student union sports facilities
Student union cafeteria/catering service	

Source: Compiled by the author

The study conducted by McInnis et al (200b), reveals that without the above- mentioned services more than 1 in 5 students would have dropped out of Higher Education and that even 1 in 3

¹⁸ Emotional resilience that permits enjoyment in life and ability to deal with pain, disappointment and sadness. It also enables productive participation and contribution to the society or community.

<https://www.universitiesuk.ac.uk/policy-and-analysis/reports/Documents/2015/student-mental-wellbeing-in-he.pdf>

students (with special abilities) would have followed the same path. It also discovered that in Australian universities, the academic and personal support service of the Indigenous Centers was a vital factor in student retention and achievement (Walker, 2000). McInnis et al (200b, in their main study on Australia, also provided an insight into the most important services by usage:

Service	Percentage use
Employment services	81.9%
Information services	80.9%
Facilities	79%
Health and medical	72.1%
Learning support services	70.5%
Student association services	68.4%
Financial assistance	68.3%
Counselling services	66.7%

Source: Compiled by the author

On the other hand, in the UK, higher education institutions are known to be responsible for designing their own counseling and guidance services for students¹⁹.

This is based on "The revised UK Quality Code for Higher Education" which states that: from admission to completion, all students must be provided with the support they require to successfully complete higher education; this in turn means that the institution providing the service must have sufficient and appropriate facilities/services, learning resources and student support services to optimally deliver a high-quality academic service. (UKSCQA - UK Standing Committee for Quality Assessment, 2018).

The European Commission, through EURYDICE, declares that higher education institutions should provide the following services (European Commission - EURYDICE, 2019):

¹⁹ It is interesting to note that although HEIs are responsible, they have to be aligned with the UK Quality Code for Higher Education, which is responsible for educational quality in the UK.

Academic Orientation ²⁰	Psychological Accompaniment ²¹	Professional Orientation ²²
Course guidance	Counselling	Careers advice, including graduate placements, careers fairs and further study opportunities
Personal tutors	Student mental health advice	CV workshops
Skills guidance	Exam concessions and arrangements	Networking / mentoring opportunities
	Mentoring	Coaching on interview techniques
	Peer support	Support with job applications

Source: Compiled by the author

The following are the three main areas that, according to what obtains internationally, an educational Digital Hub usually has: "Learning Resources Center"/ "Teaching and Learning Resources Center", Psychological Counselling, and Career Guidance.

1. Learning Resources Centers / Teaching and Learning Resources Center

With the advent of new technologies, countries have been forced to make the required Digital Transformation, in other words, to digitize. This process in higher education is strongly influenced by government policies and the development of strategies of the institutions themselves; both play a vital role in the development of digitization for Higher Education (Xiao, 2019). However, it is not only a Top-Down measure, resulting from a state policy but Higher Education must become more competitive and evolve integrally by efficiently exploiting all opportunities and the potential provided by the large number of digital technologies currently available (Castro, Tamayo, Arango, Branch, & Burgos, 2020).

This process has been evolving in Higher Education for more than 20 years with the implementation of various strategies to bring the student closer to the services offered by the institution: Virtual Campuses (enrollment in the institution, selection of materials, among others),

²⁰For further service specifications: https://eacea.ec.europa.eu/national-policies/eurydice/content/guidance-and-counselling-higher-education-80_en

²¹ Since December 2016, UK universities launched a program that seeks to provide mental health care and wellbeing for students and faculty. One of the conclusions was that attention to these issues in higher education should be a priority.

²² Unlike Academic Orientation, which is mandatory for all universities, Professional Orientation area is not, but all universities do it. This is related to the fact that several Master's degree courses require the development of skills, and thus several higher education institutions help students develop "soft skills" such as: effective communication, teamwork, critical/creative thinking and problem-solving skills.

In many cases, students can continue to access these services up to 3 years after graduation or even permanently.

Virtual Libraries (information sources with technology features) or Learning Resource Centers (OECD, 1998). The central idea of these initiatives was to provide services which would gradually become more personalized and not only to students, but also to teachers; and of greater variety in technological, welfare and learning aspects. These services sought to be more focused on the user, and their needs, and not exclusively function as data centers only (Abdelrahman Al Saadany, 2013).

The idea of Virtual Campuses or Virtual Libraries has been left behind. It has now given way to more multifaceted spaces where student-centered learning, access and training in technologies, accessibility and distance learning are the main focus (OECD, 1998). These centers are known internationally as "Learning Resources Centers", "Teaching & Learning Centers", among others.

It is worth noting that according to the literature reviewed, Digital Hubs offer services related to education but can also offer services related to other sectors (Health, Welfare, Online Processes, etc.); while at "Learning Resources Centers" or "Teaching & Learning Resources Centers" the services provided are exclusively related to education.

In the case of Learning Resources Centers, the central objectives to be achieved by students and teachers in these spaces are specified as follows (Ash, 2017):

- Students:
 - Provide a new type of services based on digitalization that allows all the actors of the education community to navigate in this world, avoiding difficulties of space and time.
 - Promote self-learning and virtual learning environments, as well as provide support for the learner-centered education system instead of the curriculum-centered education system.
 - Promote alternative learning, development and participation in meaningful discovery.
 - Support persons with disabilities by providing an assisted technology platform for accessing learning resources.

- Teachers:
 - Provide support to teachers for research, design and development of teaching materials.

At the Teaching & Learning Centers, it is possible to verify a greater impact, greater study and greater concern for the development and performance of the teaching team when they provide counseling/classes to students. In Australia, Deakin University conducted a study with the objective of evaluating the strategic contribution of Teaching & Learning Centers to academic development in Higher Education. It was determined that to maximize strategic impact, centers can and should contribute at different levels to positive change. Ten points of influence were determined (Holst, Palmer, & Challis, 2011):

Point of Influence in the teaching and learning network



Source: Compiled by the author

Similarly, for the "Teaching & Learning Centers" to be an integral and valued part of the university itself, there are four factors that should work synergistically and productively (Challis, Holt, & Palmer, 2009):

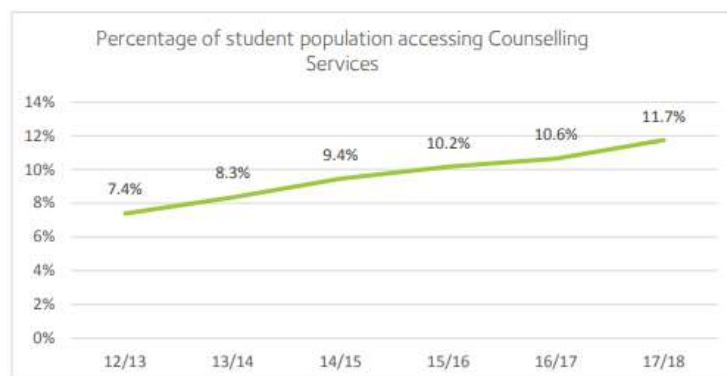
- Strategic leadership of appropriate members and the Center to provide clear roles and direction.
- Mutual understanding and appreciation of the Center's role and objectives.

- Ability of the Center itself to fulfill its role and achieve its objectives.
- Center's ability to demonstrate value.

2. Psychological counselling

One of the issues that is being taken quite seriously at the international level is the Mental Health²³ and Well-being²⁴ of students and teaching staff, even more so now during the pandemic. In the United Kingdom, in the course of academic year 2015/2016, 15,395 first year students had some kind of condition classified under mental health (JISC and Emerge Education, 2021). Similarly, the number of students with some type of disability who indicated they were experiencing some kind of mental health condition grew from 5.9% in 2007 to 9.6% in 2012; and from 0.4% to 0.8% across the entire UK university student population (Universities UK, 2015).

Globally recognized universities, such as Oxford, posit that Counselling is the largest service they provide to students (University of Oxford - Student Welfare & Support Services, 2018). According to Oxford, this service has grown steadily between the years 2012-2018 with an annual incremental increase, equivalent to 4.4% percentage points overall:



Source: *Counselling Service Annual Report 2017-18*

²³ Mental Health: Encompasses the emotional resilience that allows for enjoyment of life, pain survival, disappointment, sadness. It promotes productive participation in society and contributes to the development of a healthy life.

²⁴ Wellness: having a positive sense of mental well-being. It is possible to have a good sense of mental well-being and yet live with a diagnosed mental illness.

In parallel, the Equality Challenge Unit (ECU) - Students statistical report 2020 gave the general status in the United Kingdom for the year 2020 on mental health problems of students with some type of disability:

Number of students, with any type of disability, with mental health problems 2016-2019.

	Year	Number	% students with some type of disability	% students
Mental Health Status	2018-2019	89,350	27.0	3.7
Mental Health Status	2017.-2018	72,360	23.9	3.1
Mental Health Status	2016-2017	57,300	20.5	2.5

Source: Compiled by the author

The increase is clear and constant, but the work being done at English universities is not isolated. There is articulation in the work done by academia, students' own initiatives and external organizations that propose documents, publications, guidelines and good practices, which have an effect not only on students but also on the academic staff dedicated to student welfare (UK Universities, 2015).

According to UK Universities, the reasons why students tend to require this service are:

Separated from family and existing friends
Move to a new area or country
Experience a range of different cultures
Communicate in a language in which they are not fully fluent
Meet unfamiliar modes of learning, teaching and assessment, and unfamiliar professional requirements
Manage changed financial circumstances, including living on greatly reduced incomes or taking out loans for the first time
Balance study with being a parent or career, or part-time or full-time employment
Manage the transition from home to university life
Make the transition from home to university local health providers and support services

Source: Compiled by the author

The services offered by the counselling areas, which have been seen to be implemented across the UK are (UK Universities, 2015):

Services offered by the Counselling Division

Counselling	Support provided within faculties and teaching departments including personal tutors and pastoral support systems	Academic learning enhancement and study skills advice
Mental health advice	Accommodation services, including resident welfare staff and peer supporters	Mentoring and advocacy
Wellbeing advice and support	International student advice and guidance	Careers services
Psychiatric consultancy	Chaplaincy and multi-faith support	Student health and/or occupational health services
Services for disability, dyslexia and other specific learning difficulties	Financial guidance and resource	Peer-led support groups and student ambassadors and mentors

Source: Compiled by the author

It is important to highlight that the support services provided by universities should be more effective. Its primary purpose is to enhance the student experience for the student and not just to ensure compliance with existing policy at the center where studies are being undertaken (UK Universities, 2015).

3. Career Guidance

The Organization for Higher Education, Co-operation, Research and Development (OECD) has proposed the crucial role of Career Guidance to assist individuals of any age, at any time in their lives, to educate them, provide training, job options and offer advice on how to manage their own professional careers (Orellana, 2016). In this regard, the United Kingdom²⁵ and the United States are world leaders in the development of this type of services (Orellana, 2010). In the case of the United Kingdom, the actions offered by Career Guidance usually include: career counseling, help with CV preparation and job applications; skills development for job interviews; and networking/mentoring opportunities and on-campus fairs, so that future employers can meet students (Long, Hubble, & Loft, 2020).

²⁵ Although it is not mandatory for higher education institutions in the United Kingdom to provide this service, this area is offered by all study centers. It should be noted that this service may continue to be offered after students have completed their studies.

The University of Sussex conducted a study among first year students to assess students' preferences on how they wished to receive the Career Guidance service. The following are some of the findings (Standage, 2018):

- Students were more satisfied with employability modules based on skills development than theoretical aspects.
- The students' preferred components were:
 - o Relevant aspects of the market for your own career
 - o Counseling for recruitment and hiring
 - o Most important: Meetings with professionals and employers - as it gave them a "real" glimpse of working life.

On the last point, the Association of Graduate Careers Advisory Services (AGCAS), through The House of Commons, UK, indicates that employer involvement is a key feature of the strategies used in Career Guidance. Some of the activities/initiatives of the employers themselves included:

- Employer presentations (92% of services apply)
- Employer-led skills workshops/seminars (88% of services apply)
- Employer attendance at job fairs (52% of services apply)

Finally, it should be noted that Career Guidance agencies themselves are static bodies that draw on traditional employers in medium or large companies. AGCAS observed that 9 out of 10 Career Guidance agencies developed relationships with external stakeholders including regional/local businesses (86%), Municipalities (66%) and Local Enterprises (59%). These initiatives, apart from broadening the spectrum of options for the student, play an important part in the role that universities play in their own home regions by facilitating the relationship between their students and the local market.

Organizations such as the OECD, the World Bank, the European Union and the International Labour Organization have emphasized the importance of the Career Guidance service, particularly in terms of achieving the following objectives:

- Lifelong Learning
- Labor Market
- Social Equity and Social Inclusion

V. Peru: Implementation Proposal

Within the framework of the National Policy for Higher and Technical-Productive Education (ESTP)²⁶, there are two main rationales for the promotion of alternative services that strengthen students' capacities for their university life.

The first has to do with the first priority objective of the ESTP, which is commitment to equitable and quality access, including the entire population that has the potential and aspiration to participate and grow as a result (Ministry of Education, 2020). As the policy indicates, only three out of every ten students who complete basic education go on to higher education, which is much lower compared to countries such as Chile and Colombia. Similarly, only two out of every ten young people from the lowest quintile of household per capita expenditure gain access to higher education, while five out of every ten young people from the highest quintile have access to these educational services (Ministry of Education, 2020).

Given this situation, there is the need to develop strategies to ensure not only the transition from basic education to higher education, but also access, permanence and equity to avoid early dropout. As indicated by the OECD (OECD-World Bank, 2012) dropout is a problem in terms of both efficiency and equity. It is clearly inefficient that a significant number of young people who start higher education studies do not manage to complete them: most of the money invested is wasted.

And it is precisely here where the Peruvian Ministry of Education plays an important role. The Ministry seeks to strengthen and promote the retention of students by improving the educational service. It must be understood that the higher education service, as detailed above, has undergone

²⁶ SUPREME DECREE N.° 012-2020-Ministry of Education (MINEDU)

changes and what is desirable is to generate a more personalized service that meets the needs of students, covering aspects such as mental wellbeing, technological resources, digital skills, etc., which in many cases have been dragging, since secondary education. Currently, this is not provided and the following situations exist (Ministry of Education, 2020):

- At the university level, only one third of the students are satisfied with the complementary educational services (medical service and psychological assistance, university canteen, cultural/artistic/sports activities, among others). This shows the need to improve these services, also taking into consideration the diversity and population with greater needs, such as students with disabilities, among other groups with greater risk of vulnerability.
- In the technological, pedagogical, artistic and technical-productive fields, despite the existence of some institutional initiatives, it has been noted that, in general, there is no strategy for the provision of complementary services. The situation in these educational options demonstrates the lack of attention to the complementary support needs of students, which limit the achievement of their skills and other related impacts, such as attrition (MINEDU, 2019b).

The second is based on the second priority objective of the ESTP which is to strengthen the comprehensive training of EST students, which responds to the social, cultural and productive contexts (Ministry of Education, 2020). The central idea of this priority objective is to be able to adapt the ESTP curricula to current needs and promote the comprehensive training of students.

The context at the time of completion of studies is not necessarily one that allows them to develop all the skills necessary to face current challenges. In the same way, when we refer to necessary skills, we are referring more to technical skills that should have begun to be developed in basic education but which, for various reasons, were not achieved. According to the consulting firm Manpower (2018) 43% of companies have difficulties in finding technical skills and the increasingly necessary human strengths. This figure increases to 54% in large companies. Meanwhile 22% of Peruvian companies indicate that inadequately educated workforce is the second most important obstacle they face in their operations (Enhat, 2018).

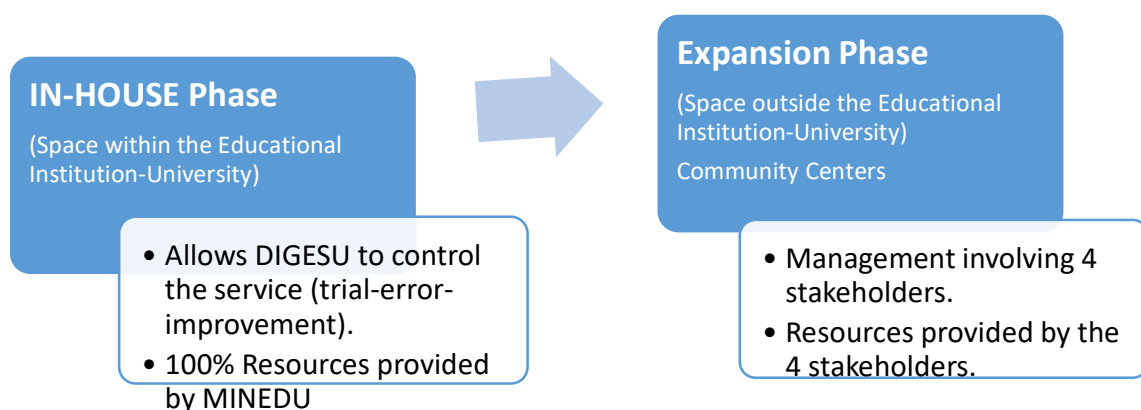
The alternative services proposed should be aligned with the ESTP and the aforementioned priority objectives. Similarly, the health emergency due to the Pandemic must be taken into account. This situation has forced 100% of university classes to be online, which has also demonstrated a shortcoming: the importance of technology in higher education, both for teachers and students.

1. Educational Community Support Center

Taking into account the information presented in the document - international cases on the different types of Digital Hubs and on the Student Support Centers (focusing on the Learning Resources Center / Teaching and Learning Resources Center, Psychological counseling and Career guidance) – the suggestion is that the **Educational Community Support Center** (Digital Hub + Student Support Center) be implemented in phases.

Considering variables such as Budget, Intra-MINEDU Management (with other departments of the same Ministry), Management in regions (working with Regional Governments and Universities, Intersectoral Management (linking with other sectors to take advantage of opportunities) and, above all, the design of the service itself (which will allow DIGESU to be direct agents of management, implementation and opportunities for improvement), it is proposed that this implementation could have 2 Phases:

Installation of an Educational Community Support Center Phase



Source: Compiled by the author

1.1 IN-HOUSE Phase

In order to cover the needs of the Educational Community, the proposal is to provide it with a Support Center. The suggestion is to take advantage of the spaces called "Computer Centers" and/or "Technology Centers" already existing in the very Universities.

There are currently 92 licensed universities nationwide. UNESCO-IESALC recommends that the centers be set up in only one group of universities. Although the choice is ultimately left to the decision of the Ministry of Education, the suggestion is that the choice be made, based on the following criteria:

1. **Number of universities:** a minimum number of 5 public universities, but no more than 7. This is because the operationalization of the Centers (which requires technological and human resources and services design) will demand a certain amount of time and the Ministry of Education's own team should be present on a very continuous basis. The process is iterative and needs to be continuously improved. It is suggested that this process should not be left to the universities. The work should be collaborative and co-creative²⁷.
2. **Services to be chosen for implementation in universities:** The selection of services should satisfy the following three criteria. The first is supporting literature on the services chosen and their impact. The second is the choice of the users themselves (students) and the third is regional needs (Axis: Internet connectivity). For the second source, it is suggested that a survey be conducted among students whereby they are given a list of services (with a brief explanation of what they are and what impact they are expected to have on them) so that they can make their own choice. There should be a balance between the three sources mentioned.
3. **Student Population:** select the university based on the number of students it has. Although public management would prioritize the implementation of the centers in those universities that have the largest number of students so that their impact is greater, it is recommended not to rely exclusively on the "high impact" variable. It is suggested that

²⁷ Process where both parties work collaboratively to design the service.

universities be chosen from a previous categorization, by variables, that the DIGESU has with respect to the centers of studies. For example: "Management capacity of the University", "Performance of Deans", "Characteristics of the University (rural area, urban area)" or "Infrastructure of the University (Equipment, Internet connectivity)", among others.

4. **Political/management facility:** take into account the facilities, in terms of management, that the university may have in order to expedite technological and human resources implementation, and installation of services. It could be the case that the chosen university meets all the prerequisites, but if it lacks internal management facilities, the recommendation is not to give it priority. In order to quickly achieve operationalization, the management capacity of the universities is a determining variable, not only for its installation, but also for its continuity.

The following is a detailed description of the Services Design process of the **Educational Community Support Centers**. It should be noted that there are two aspects to this design:

- The Process follows the Roundtable on Digitising European Industry.
- The Double Diamond Methodology²⁸: a methodology designed by the Design Council, one of the UK government's advisory bodies on service design. The Double Diamond methodology is part of the innovation framework and consists of a clear, complete and visual description of the project process to achieve positive, significant and lasting changes. It embodies four basic principles:
 - Put people first: the first step is to understand the user's needs, strengths and aspirations.
 - Communicate visually and inclusively: help persons understand problems and ideas.
 - Collaborate and co-create: always work together.

²⁸ <https://www.designcouncil.org.uk/news-opinion/what-framework-innovation-design-councils-evolved-double-diamond>

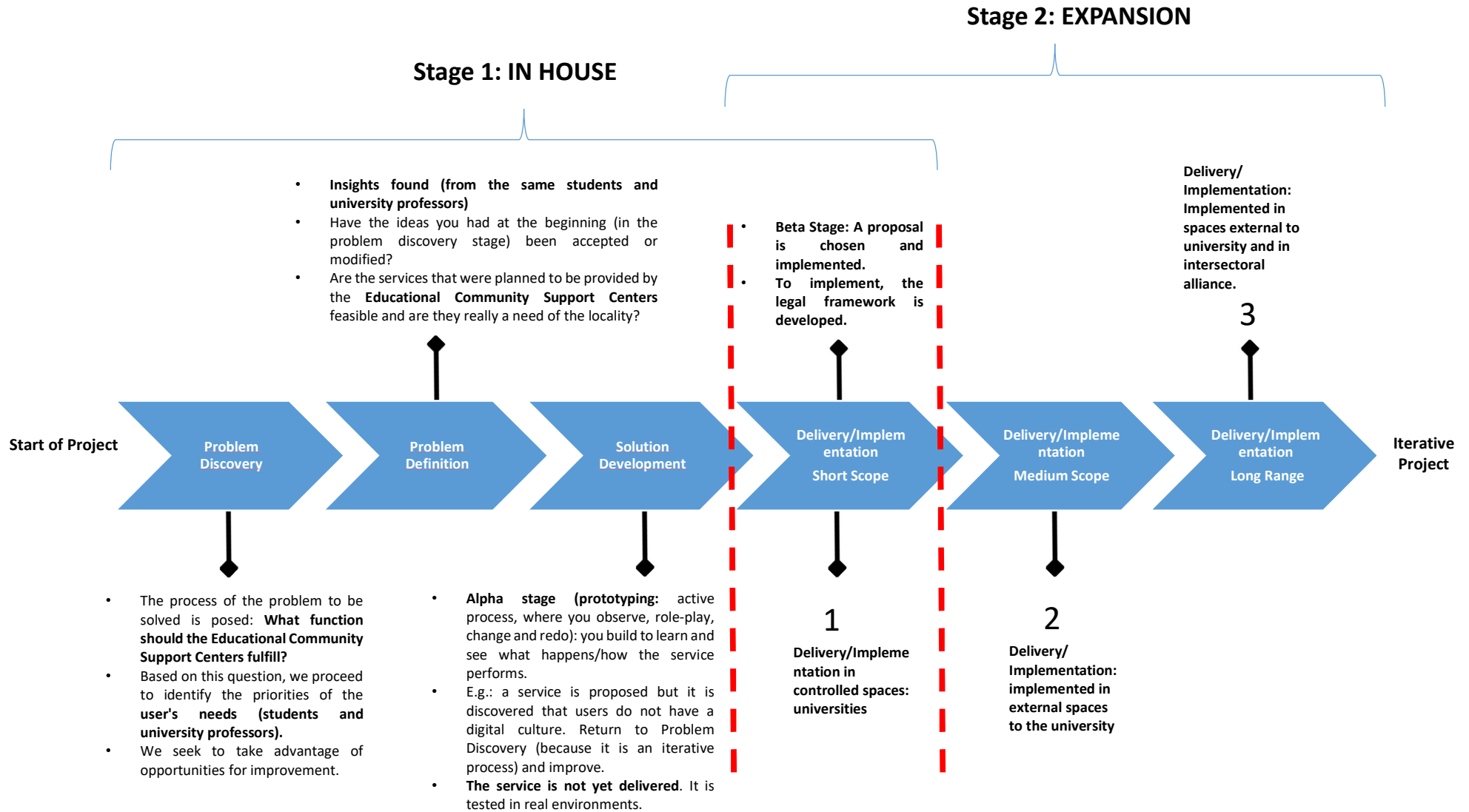
- Continuous iteration: process never ends. Iterate to detect errors and improve.

It is of vital importance that when designing services, it is done in a co-creative and co-participative way with the users (students and teachers) in order to glean real insight and generate services based on the user's needs, and not based on what DIGESU -MINEDU can do.

Similarly, the proposed process is iterative, it does not end. Usually, in public management, we are accustomed to generating processes according to phases; we finish them and never go back.

What this process proposes is to always return to the first 2 phases and continue discovering the changing needs of the user. This also means that if there is a problem in the implementation (which is fine and normal), the cost (monetary and temporal) is less to correct and to improve.

Services Design Phase



1.2 EXPANSION Phase

While the IN-HOUSE phase proposed to use the same computing environments as the universities, the EXPANSION phase proposes to take the **Educational Community Support Center** model to a space outside of the universities.

It is expected that at the end of the IN-HOUSE phase, the management behavior of the model will be known. With the knowledge acquired (and through certain steps that would have to be taken at the same time as the IN-HOUSE phase), it will be more feasible to take the implementation of the **Educational Community Support Centers** to another space where the control will not be under MINEDU.

It is proposed that the EXPANSION phase have 3 stages:

- b. **Delivery/ Short-range implementation (Controlled space: universities):** implementation spaces will be in the universities' own computing environments.
- c. **Delivery/ Medium-range implementation (external space):** the implementation spaces will be external to MINEDU. It could be in an existing Community Center in the locality or in a space provided by the Regional or Local Government.
- d. **Delivery/ Long-range implementation (external intersectoral space):** the implementation spaces will be external to MINEDU. It would be articulated with other sectors that have similar initiatives, in order to take advantage of spaces, budget and positioning. On this point, the Ministry of Development and Social Inclusion -MIDIS and their project PROGRAMA PAÍS have been identified as a strong stakeholder for collaboration purposes.

Within the framework of what DIGESU is seeking, the PAÍS Program proposal would be a great fit to take the **Educational Community Support Centers** to a stage of expansion where they can articulate with the central government itself. This is validated by existing literature which speaks to the value of Digital Hubs (and their models) and Student Support Centers and the diversity of services they provide beyond education, serving to even further promote the local market.

The following is the route of the 3 phases that could be carried out by DIGESU -MINEDU for the EXPANSION of the **Educational Community Support Centers**:

Stages for EXPANSION Phase

Phase	Variable	Actors involved	Deadline	Actions	Proposed Services
1. Delivery/ Short Range Implementation (Controlled Space: Universities)	Infrastructure	MINEDU	Start of operation: Beginning of academic year 2022	<ul style="list-style-type: none"> - Do not generate infrastructure, use what already exists within the public sector (preferably university spaces). - Start with national mapping of similar spaces. 	<ul style="list-style-type: none"> - Internet access for online classes. - Placement services for 4th and 5th year high school students (Chile -PACE). - Vocational access for high school students - MINEDU technical-productive training. - Career Guidance and Counselling
	Services	MINEDU University (Educational Community)		<ul style="list-style-type: none"> - Define the services to be offered by the Educational Community Support Center. This is the heart of the strategy and its choice and design must go hand in hand with the community. - Manage the acquisition for the implementation of physical equipment. - Evaluate the use and impact of the services in the community. 	
	UGEL/ Local Government	Local Government		<ul style="list-style-type: none"> - Start mapping with the Local Government or UGEL the services (if any) that are being provided in similar initiatives in the locality. 	
2. Delivery/ Mid-range Implementation (External Space) 3. Delivery/ Long-range implementation (Cross-sectoral external space)	Infrastructure	Regional Government Local Government	Start of operation: Mid Academic Year 2022	<ul style="list-style-type: none"> - Manage the spaces (previous mapping results) of the first phase. - Map cases in which there is already work between the public and private sectors to form alliances. 	<ul style="list-style-type: none"> - Internet access for online classes. - Placement services for 4th and 5th grade high school students. - Vocational access for high school students - MINEDU technical-productive training courses. - Career Guidance and Counselling - Internet services for online procedures - Multisectoral services: health, labor, security, agriculture.
	Services	MINEDU Community		<ul style="list-style-type: none"> - Define the services to be offered by the Educational Community Support Center. This is the heart of the strategy and its choice and design must go hand in hand with the community. - Through the iterative process, the need for the services to be provided in the Educational Community Support Center is adjusted. - The evaluation of the use and impact of the services in the community is carried out. - The work with other sectors is activated for possible articulation. 	
	UGEL/ Local Government	Local Government		<ul style="list-style-type: none"> - Responsible for facilitating a team of people (1-2) who have the role of facilitators-promoters in the Educational Community Support Center. 	
	Partnerships with Private Enterprise	Private Company		<ul style="list-style-type: none"> - Mapping in cases where there is already some type of Community Center working in collaboration with private enterprise. 	
3. Delivery/ Mid-range Implementation (External Space)	Infrastructure	Central Government	Start of operation: Beginning of academic year 2023	<ul style="list-style-type: none"> - Ally and coordinate with other central government initiatives that decentralize services in rural areas (Country Program). 	<ul style="list-style-type: none"> - Internet access - Remedial services for 4th and 5th year high school students - Vocational access for high school students - MINEDU Technical - Productive Training Courses - Career Guidance and Counselling - Internet services for online procedures - Multisectoral services: health, labor, security, agriculture. - Training with private companies.
	Services	MINEDU Community Local Government Private Sector		<ul style="list-style-type: none"> - Define the services to be offered by the Technology Center. This is the heart of the strategy and its choice and design must go hand in hand with the community. - Through the iterative process, the need for the services to be provided in the Technology Center is adjusted. - The evaluation of the use and impact of the services in the community is carried out. 	
	Partnerships with Private Companies			<ul style="list-style-type: none"> - Continued coordination- with the private sector to see how they can contribute. 	

Note:

DIGESU -MINEDU took the decision to carry out the implementation in 3 phases. There is also the possibility, and this will depend on the management capacity, to carry out the implementation in 2 phases: Delivery/ Short-range implementation (Controlled space: universities) and Delivery/ Long-range implementation (External intersectoral space).

This will depend on the urgency with which the PAÍS Program is started and the services and/or methodology defined.

1.3 Adequacy of Physical Resources for Educational Community Support Centers: IOARR

The contracting processes in Peru, as in any other part of the world, are long and require extensive oversight. Although in the IN-HOUSE phase the objective is to take advantage of a pre-existing physical space in the chosen Universities, it can be assumed that the equipment of these spaces is not adequate or needs to be renovated (it is suggested that MINEDU evaluates this). The aim is to find a rapid route for the purchase/implementation of the necessary physical resources within the framework of the legal system.

In order to generate the ad hoc route for the Educational Community Support Centers, the investment modality called Optimization, Marginal Expansion, Rehabilitation and Replacement Investments (IOARR) has been identified within the framework of the National System of Multiannual Programming and Investment Management (Invierte.pe).

The IOARR is a specialized intervention in respect of one or more strategic assets (AE) that conform an operational Production Unit (PU) and whose purpose is to:

- a. Adapt the level of utilization of the current capacity of a PU, so as to achieve optimal capacity in terms of the corresponding quality standards and service levels, including the absorption of minor changes in the demand for the service;
- b. Avoid interruption of the service of a PU or minimize the interruption time due to deterioration in its quality standards, whether due to the occurrence of damage, normal wear and tear or obsolescence that seriously affects its useful life and compromises the current capacity of the

PU, in such a way as to avoid the interruption of the service provided by a PU or that the interruption is prolonged when it has occurred. (Ministry of Economy and Finance - MEF, 2020)

In the framework of the implementation of **the Educational Community Support Centers**, IN-HOUSE phase, the first objective fits because it would be based as a current PU to the Computer Laboratories of the Universities that need to reach an optimal capacity/functioning. It would be an IOARR with a Production Unit approach.

In this way, 03 management areas have been mapped for the implementation of the **Educational Community Support Centers**:

a. Physical Resources:

- Infrastructure
- Equipment / Furniture (PCs, Projector, Chairs, technological software)
- Software for virtual libraries
- Software for different careers of students
- Regular printers, 3d printers
- Maintenance (Internet, Electricity, Water): this service is the only one not covered by the IOARR. As stipulated "Maintenance expenses of an ongoing nature are not part of IOARR and cannot be programmed, registered or executed within the framework of Invierte.pe".

b. Human Resources:

Specialized personnel required for the services to be provided. It must be taken into account that the services that DIGESU -MINEDU chooses to implement have specific profiles:

- Management and Technical Profile (for Digital Hub area): person(s) with ICT skills and university level specialized software.
- Psychologist and Accompaniment Profile (for Student Accompaniment area): professional person(s) who will be responsible for the welfare of students and teachers.
 - Manager profile (for Career Guidance area): person(s) responsible for generating and promoting the employability strategy.

VI. References

- Abdelrahman Al Saadany, D. (2013). The reality of the use of learning resource center specialist for libraries and digital resources as a tool for continuing professional development "A comparative study between Egypt and Saudi Arabia" . *Procedia - Social and Behavioral Sciences*, 3002 – 3011.
- Abudein, K. (March 20, 2021). Opinion: Connectivity and social development. Retrieved from <https://www.elpais.com.co/tecnologia/opinion-conectividad-y-desarrollo-social.html>
- Ash, M. (2017). Library to Learning Resource Centre. *Akshar - VOLUME - VI*, 61-64.
- Castro, L., Tamayo, J., Arango, M., Branch, J., & Burgos, D. (2020). Digital Transformation in Higher Education Institutions: A systematic Literature Review. *Sensors*, 1-22.
- Challis, D., Holt, D., & Palmer, S. (2009). Teaching and learning centres: towards maturation. *Higher Education Research & Development*, 371-383.
- El Peruano. (September 7, 2017). Normas Legales. Decreto Supremo que establece el Programa Nacional "Plataformas de Acción para la Inclusión Social - PAIS", based on the National Program Tambos, 14-15
- European Commission: Smart Specialisation Platform. (2017). Roundtable on Digitising European Industry. European Commission.
- European Commission - EURYDICE. (2019). Guidance and Counselling in Higher Education. Retrieved from https://eacea.ec.europa.eu/national-policies/eurydice/content/guidance-and-counselling-higher-education-80_en
- Girardo, S., & Saenger, C. (2007). Community Learning Centers in Mexico: some considerations on their mode of operation. *Virtualis No. 3*, January - June 2011, 25-38.
- Hill, Y., Lomas, L., & MacGregor, F. (2003). Students perception of quality in higher education. *Quality Assurance in Education*, 15-20.
- Holst, D., Palmer, S., & Challis, D. (2011). Changing perspectives : teaching and learning centres' strategic contributions to academic development in Australian higher education. *International journal for academic development*, 5-17.
- JISC and Emerge Education. (2021). Student and staff wellbeing. London-Bristol: JISC and Emerge Education.
- Long, R., Hubble, S., & Loft, P. (2020). Careers guidance in schools, colleges and universities. Briefing Paper. London: House of Commons Library.
- McInnis, C., James, R., & Hartley, R. (2000). Trends in the first year experience in Australia. Melbourne: Department of Employment, Education, Training and Youth Affairs. (McInnis et al., 2000b) .
- Ministry of Economy and Finance - MEF. (2020). Guidelines for the identification and registration of optimization, marginal expansion, rehabilitation and replacement investments - IOARR. Lima: Ministry of Economy and Finance - MEF.

- Ministry of Education. (2020). Política nacional de educación superior y técnico-productiva. DECRETO SUPREMO N.º 012-2020-MINEDU. Lima: Ministry of Education..
- Ministry of Information Technologies and Communications . (2021). Centros Digitales: Centros Digitales, una Política de Estado de conectividad social. Retrieved from https://micrositios.mintic.gov.co/centros_digitales/pdf/centros_digitales_presentacion.pdf
- Ministry of Information Technologies and Communications of Colombia. (2021). This is how the Digital Centers will connect students and 'teachers' of 14,745 public schools in the country. Retrieved from <https://www.mintic.gov.co/portal/inicio/Sala-de-Prensa/Noticias/161597:Asi-conectaran-los-Centros-Digitales-a-estudiantes-y-profes-de-14-745-colegios-publicos-del-pais>
- Ministry of Telecommunications and Information Society - MINTEL . (2021). Infocentros. Retrieved from <https://infocentros.mintel.gob.ec/que-son-infocentros/>
- Ministry of Telecommunications and Information Society. (2021). Infocenters. Ecuador.
- Ministry of Telecommunications and Information Society. (2021). Infocentros - Emprendimientos. Retrieved from <https://infocentros.mintel.gob.ec/emprendimientos/>
- National Council of Economic and Social Policy - CONPES. (March 3, 2021). Digital Centers. Retrieved from https://micrositios.mintic.gov.co/centros_digitales/pdf/documento_CONPES_4001.pdf
- OECD. (1998). Libraries and Resource Centres for Tertiary Education. OECD.
- OECD - World Bank. (2012). Higher Education in Colombia. Paris: OECD.
- Orellana, N. (2016). Extending the Scope: Career Guidance in Higher Education. Retrieved from https://www.researchgate.net/profile/Natalia-Orellana/publication/303989036_Extending_the_Scope_Career_Guidance_in_Higher_Education_Ampliando_el_objetivo_Desarrollo_de_Carrera_en_Educacion_Superior/links/5761b75708ae2b8d20ed5ef8/Extending-the-Scope-Career
- Orellana, N. (2010). Higher Education-Employment Transition: What Career Guidance and Support Services Do Chilean Institutions Offer? Kassel: Organization for Cooperation, Research and Development in Higher Education (OXIDES).
- Prebble, T., Hargraves, H., Leach, L., Naidoo, K., Suddaby, G., & Zepke , N. (2004). Impact of Student Support Services and Academic Development Programmes on Student Outcomes in Undergraduate Tertiary Study: A Synthesis of the Research (Report to the Ministry of Education). Ministry of Education - New Zealand.
- República del Ecuador. (2009). Plan Nacional para el Buen Vivir. Quito: SENPLADES.
- Standage, H. (2018). Different approaches to teaching employability. Retrieved from Prospects Luminate: <https://luminare.prospects.ac.uk/how-should-universities-teach-employability>
- Undersecretary of Telecommunications - Chile. (2020). National Report: State of progress of the telecommunications development fund projects. Santiago : Undersecretary of Telecommunications.

- Thomson, L., & Murray-Sanderson, A. (2017). *Libraries as community hubs: Case studies and learning*. Londres: Renaisi.
- UKSCQA - UK Standing Committee for Quality Assessment. (2018). *The revised UK Quality Code for Higher Education*. Londres: UKSCQA.
- University of Oxford - Student Welfare & Support Services. (2018). *Counselling Service Annual Report 201-18*. Oxford: University of Oxford .
- Universities UK. (2015). *Student mental wellbeing in higher education - Good practice guide*. Londres: Universities UK.
- Walker, R. (2000). *Indigenous Performance in Western Australia Universities: Reframing retention and success*. Evaluations and Investigations Programme of the Department of Education, Training and Youth Affairs.
- Xiao, J. (2019). Digital transformation in higher education: critiquing the five-year development plans (2016-2020) of 75 Chinese universities. *Distance Education*, 515-533.
- Yualema Zavala, O., & Blanco Encinosa, L. (2017). Infocenters in Ecuador: social inclusion in action in Information and Communication Technologies. *Cofín Habana*, 270-280.