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# FROM EMERGENCY REMOTE TEACHING TO COLLABORATIVE ONLINE INTERNATIONAL LEARNING: INSTITUTIONAL CHALLENGES, OPPORTUNITIES, AND THE ROLE OF ARTIFICIAL INTELLIGENCE IN HIGHER TRENDS AND RECOMMENDATIONS

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## ABSTRACT

***Undoubtedly, the COVID-19 pandemic left numerous consequences worldwide, as the health crisis triggered a significant impact on both the economy and society. One of the most affected areas was education, particularly higher education. To curb the spread of the virus, governments implemented measures such as mobility restrictions and mandatory social distancing. These provisions rapidly spurred the adoption of virtual modality, which represented a drastic change in educational processes. While some higher education institutions already had prior experience with online education, for many others, virtual learning posed a significant challenge, as students and faculty had to adapt in a short period of time. Based on the information gathered in this study, it was found that both faculty and students in higher education view the online education format negatively, due to concerns about the quality of the teaching and learning process. Among the most relevant factors are limited internet connectivity in different regions of the country, the lack of adequate planning for the development of online classes, insufficient preparation of teachers and students in the use of digital platforms, and a lack of pedagogical and didactic resources to guarantee student motivation and retention, thus preventing academic dropout. In this context, the research focuses on the benefits and challenges of Collaborative Online International Learning (COIL) projects for both teachers and students, as well as analyzing the role of institutional planning and administrative support in adapting to virtual education. It also examines the impact of implementing COIL exchange platforms and the future perspectives that educational stakeholders identify regarding this modality. The method used in this study was the inductive approach of qualitative research. The most significant benefits for faculty include access to new learning opportunities, aligned with the strategic planning of the core areas of research, teaching, community engagement, and institutional management at universities. However, the main challenges relate to time availability, student motivation, and the level of commitment from collaborating faculty aspects that require institutional support strategies and innovative methodologies to ensure the effectiveness of educational initiatives. The pandemic, in this sense, accelerated universities' forced adaptation to virtual learning. However, the results show that most institutions belonging to REDEC (the Network of Colombian and Ecuadorian Universities) were not prepared for the planning and implementation of the COIL methodology,***

***much less for offering quality online programs. The health emergency thus became the only possible catalyst for these institutions to develop, in an emergent and unplanned manner, strategies for virtual and collaborative education. Furthermore, the rapid incorporation of digital technologies and Artificial Intelligence (AI) into higher education particularly in English language instruction for Business Management has intensified debates regarding pedagogical effectiveness, ethical implications, data privacy, and faculty preparedness. While AI offers significant potential to enhance personalized learning and instructional efficiency.***

**KEYWORDS:** Higher education, virtuality, COIL (Collaborative International Online Learning), Teachers and students, Internationalization.

## 1. INTRODUCTION

The internationalization of higher education has become a central focus of university policies in Latin America, where foreign language programs play a key role in the training of global citizens. Collaborative Online International Learning (COIL) emerges as a pedagogical strategy that allows students and teachers to work on collaborative international projects without the need for physical mobility, promoting the development of linguistic, intercultural, and digital competencies (Rubin, 2017; De Wit & Hunter, 2023).

In the case of English–Spanish programs, COIL opens a space for pedagogical innovation that responds to the demands of international accreditation, academic relevance in the region, and the need to democratize access to internationalization experiences in Ecuadorian and Colombian universities

### *1.1. Problem statement*

The COVID-19 pandemic abruptly transformed the dynamics of higher education worldwide. The confinement and social distancing measures implemented by governments accelerated the transition towards virtuality without, in most cases, sufficient institutional preparation existing. This situation impacted both the national and international higher education systems in Latin American countries, particularly Colombia and Ecuador, where structural, technological, and pedagogical weaknesses affecting the quality of the teaching and learning process were evident. Internationally, while some universities already had experience in online education and pedagogical innovation methodologies, others were forced to implement emergent virtualization strategies, creating inequalities in educational quality between regions and countries. Nationally, in both Colombia and Ecuador, limited internet connectivity in rural and peripheral areas, lack of academic planning for the development of virtual classes, scarce training of teachers and students in the use of digital tools, and the lack of adequate pedagogical and didactic resources became determining factors in the loss of educational quality.

In this framework, the analysis of innovative methodologies such as Collaborative Online International Learning (COIL) becomes relevant, although it emerged as a pedagogical alternative to internationalize the curriculum and foster global learning, it evidenced the limitations of many higher education institutions in its planning and application, both internationally and in specific academic networks like REDEC (Network of Colombian and Ecuadorian Universities).

Thus, the central question arises:

How was the quality of higher education affected during and after the COVID-19 pandemic, both in the national (Colombia and Ecuador) and international contexts, considering factors such as institutional preparation, teacher training, connectivity conditions, economic and pedagogical resources, as well as the implementation of innovative methodologies such as Collaborative Online International Learning (COIL)?

With the declaration of a global pandemic of the COVID-19 coronavirus outbreak by the World Health Organization (WHO), an unprecedented health and socioeconomic crisis was triggered, whose impact was significantly reflected in higher education (Jiménez Guerra & Ruiz González, 2021). In the case of Ecuador, higher education institutions were directly affected by temporary institutional closures and measures adopted by the government, such as mobility restrictions and the suspension of in-person classes. These provisions forced universities to make an accelerated transition towards the virtual modality, which implied profound transformations in their administrative and academic processes, in the adaptation of technological infrastructure, and, in general, in the dynamics of institutional work (Santana-Sardi, Gutiérrez-Santana, Zambrano-Palacios & Castro-Coello, 2020; UNESCO IESALC, 2021).

The emergent shift from in-person to virtual education highlighted multiple structural difficulties that compromised the quality of the teaching and learning process. Among the main obstacles identified are limited fixed internet connection coverage, especially in rural areas, low quality of connectivity, economic restrictions for the acquisition of technological equipment, as well as insufficient preparation of both teachers and students for the management of digital platforms (UNESCO IESALC, 2021).

Internationally, the International Association of Universities (IAU), through a comparative study, evidenced that higher education institutions worldwide faced similar problems, including the abrupt substitution of in-person classes with online teaching, which impacted educational continuity, equity, and quality (Marinoni et al., 2020). These difficulties reveal that, beyond the health emergency, the pandemic functioned as a catalyst that exposed structural and technological gaps between countries, institutions, and students.

In this sense, it is a priority to critically analyze

the impact of COVID-19 on the quality of higher education, both in the national and international contexts, all of which is because the virtual learning model, implemented emergently, could generate risks of demotivation, exclusion, or student disengagement if it is not accompanied by pedagogical, technological, and institutional strategies that guarantee equitable access and the comprehensive development of the training process.

### *1.2. Justificación*

The COVID-19 pandemic evidenced profound transformations and challenges in higher education worldwide. The closure of educational centers and the accelerated transition towards virtuality became a necessary strategy to guarantee academic continuity; however, they also exposed multiple limitations related to connectivity, technological resources, teacher preparation, and social and economic inequalities. In countries like Ecuador and Colombia, these difficulties showed the vulnerability of the right to quality higher education, which contrasts with the principles established in national constitutions and international regulations on education as a fundamental right.

This study is justified by the need to analyze how virtuality, implemented emergently, impacted the quality of higher education and to what extent institutions managed to adapt to the demands of a new educational model. At the same time, the importance of evaluating the relevance of innovative methodologies, such as Collaborative Online International Learning (COIL), is raised, as they represent viable alternatives to strengthen the internationalization of the curriculum, promote academic cooperation, and respond to the challenges of an increasingly interconnected and digitalized educational system.

From a theoretical point of view, the study contributes to the understanding of educational transformation processes in contexts of global crisis, identifying factors that condition the quality of learning, such as institutional preparation, the use of technological resources, student motivation, and teacher training. From a practical point of view, it allows offering recommendations for higher education institutions to design sustainable strategies that ensure quality, equity, and inclusion in virtual environments. Finally, from a social dimension, the analysis seeks to make visible the urgency of reducing educational and technological gaps, guaranteeing that higher education remains an accessible and relevant right in scenarios of crisis and post-pandemic.

Consequently, study becomes a fundamental tool for academic reflection and for institutional and governmental decision-making aimed at strengthening higher education nationally and internationally.

## 2. THEORETICAL FRAMEWORK

### *2.1. Theoretical fundations*

This work analyzes the impact of virtual education implemented emergently after the appearance of COVID-19 in the country's universities, with the purpose of guaranteeing academic continuity and protecting the right to higher education. However, the accelerated transition towards this modality revealed a profound inequality in access to technological resources and in the capacity of students and teachers to adapt to new learning environments. This situation highlighted the vulnerability of the right to receive quality and excellent education in professional training processes.

In the Ecuadorian case, this problem becomes a legal and social challenge, given that it contrasts directly with what is stipulated in the Constitution and current regulations that recognize higher education as a fundamental right and a public service that must guarantee quality, equity, and relevance. The lack of connectivity, technological resources, and institutional preparation in a large part of the university system, especially in the context of public universities and in rural areas, demonstrated that sufficient conditions did not exist to fully comply with this constitutional mandate.

From a broader perspective, nationally and internationally, the post-pandemic scenario demands a review of not only the structural and access gaps but also the need to strengthen innovative pedagogical models such as Collaborative Online International Learning (COIL). This methodology, aimed at the internationalization of the curriculum and academic collaboration between universities in different countries, can become a viable alternative to improve educational quality, provided it is accompanied by adequate institutional planning, technological support, and public policies that guarantee equal opportunities.

Consequently, the analysis of virtual education after the pandemic should not be limited to identifying its limitations but also to reflect on the necessary structural changes in higher education systems. These changes should be oriented towards consolidating a model that ensures the right to quality higher education, integrating pedagogical innovation, social inclusion, and institutional

strengthening.

Carrying out an analysis of the quality of higher education in the post-COVID-19 pandemic scenario implies focusing attention on the main actors in the educational process: students, teachers, and administrative personnel of universities and higher education institutes. This focus not only allows for understanding the perceptions and experiences derived from the transition to virtuality but also for valuing the academic, administrative, and institutional transformations that emerged because of this juncture.

In this framework, it is essential to broaden the view towards the national scope—with special emphasis on the realities of Ecuador and Colombia—and to integrate the international context, so that it is possible to identify points of convergence and divergence in the strategies implemented to sustain academic continuity. Such comparisons highlight structural, technological, and pedagogical factors that conditioned educational quality, but they also reveal opportunities for innovation and global collaboration

In this sense, initiatives such as Collaborative Online International Learning (COIL) are consolidated as transformative alternatives that, beyond responding to the emergency, offer the potential to strengthen inclusive internationalization, equity, and pedagogical innovation in post-pandemic higher education. However, one of the main challenges for the full internationalization of these experiences is the limited English proficiency of a significant part of the faculty and students in Latin America, which restricts the possibility of establishing effective collaborations with Anglo-Saxon universities and, consequently, limits the global reach of COIL projects. Addressing this linguistic barrier becomes a necessary condition to guarantee the sustainability and real impact of these initiatives.

### *2.2. Internationalization at home*

Internationalization is no longer limited to the physical mobility of students and faculty. Knight (2008) defines internationalization at home as the incorporation of an international dimension into the curriculum and learning experiences, which can be done through virtual collaborative projects. In this framework, COIL is consolidated as one of the most effective tools to guarantee inclusion and equity in access to internationalization (O'Dowd, 2021).

### *2.3. COIL as an Innovative Methodology*

COIL is based on intercultural collaboration through digital environments, allowing students from different contexts to work together on academic projects. This methodology favors the acquisition of linguistic competencies in an authentic context and fosters meaningful learning through contact with international peers (Rubin & Guth, 2021).

### *2.4. Linguistic and Intercultural Competencies*

Various studies (Byram, 1997; Helm, 2019) have demonstrated that participation in virtual international projects enhances both bilingual communicative competence and intercultural competence, by placing students in scenarios of authentic interaction, negotiation of meanings, and joint construction of knowledge.

### *2.5. Higher Education in Latin America*

In Ecuador and Colombia, the teaching of English has been prioritized as part of university quality and accreditation processes (MEN, 2022; SENESCYT, 2023). The creation of academic networks, such as the Ecuadorian Network of Language Careers (REDEC) and its links with Colombian universities, represents a strategic opportunity to implement COIL projects that strengthen undergraduate English programs and promote regional integration.

### *2.6. Literature Review on COIL*

The quality of higher education must be analyzed considering not only the transformations derived from the COVID-19 pandemic but also the regulatory frameworks and fundamental principles that support it. In the case of Ecuador, the Constitution of the Republic (2008), in its Art. 26, recognizes education as a right of people throughout their lives and an inescapable and inexcusable duty of the State. It is established as a priority area of public policy and state investment, constituting a guarantee of equality, social inclusion, and an indispensable condition for good living. Consequently, individuals, families, and society have the right to participate in the entire socio-educational process.

This principle is articulated with what is stated by UNESCO (2019), which affirms that "States are the duty-bearers under international human rights law and bear the bulk of the responsibility for the direct provision of the right to education in most circumstances" (para. 2). In this way, access, equity, and quality in education become a shared responsibility between the State and the citizenry, who must assume a critical and active role in socio-educational processes.

The pandemic highlighted these obligations. In Ecuador, the government suspended in-person

classes at all educational levels and arranged for the adoption of alternative modalities such as virtual education, tele-education, and home learning. According to ECLAC-UNESCO (2020), among the Latin American countries that implemented live classes during the health emergency are Bahamas, Costa Rica, Ecuador, and Panama, while in 18 countries, the use of asynchronous virtual platforms was prioritized. These strategies showed the extensive use of digital resources but also evidenced profound social and technological inequalities that affected the quality of the educational process.

According to Morales and Vallejo (2014), virtual education integrates multiple variable educational level, knowledge, teacher-student interaction, and technological resources—which implies that the success of its implementation directly depends on access conditions and the institutional capacity to guarantee a meaningful learning experience. Along the same lines, Begoña (2004) highlights that virtual environments offer new forms of interaction and access to information, breaking physical and temporal barriers. However, these benefits are only achieved if the digital and linguistic gap that characterizes many Latin American contexts is overcome.

In the post-pandemic scenario, the challenge for universities is not only to guarantee infrastructure, technological equipment, and updated bibliographic resources but also to redefine educational quality from an inclusive, intercultural, and international perspective. At this point, experiences such as Collaborative Online International Learning (COIL) represent a model of pedagogical innovation capable of promoting internationalization without physical mobility, favoring academic cooperation between institutions in different countries.

However, one of the most visible obstacles to the success of COIL in Latin America is the limited English proficiency of a large part of the faculty and students, which makes it difficult to establish solid links with Anglo-Saxon universities. Overcoming this linguistic barrier becomes a strategic condition for internationalization to be truly inclusive and sustainable.

In short, speaking of quality in post-pandemic higher education implies articulating constitutional principles, international human rights obligations, equity in access, technological innovation, and openness to internationalization. Universities must assume a leading role not only in transmitting information but also in generating debates, critical knowledge, and intercultural experiences that strengthen both professional training and the construction of fairer and more resilient societies.

## 3. RESEARCH METHOD

### *3.1. Approach and Paradigm*

This study was developed under a mixed approach (qualitative–quantitative), integrating techniques that allow for analyzing both the perceptions and experiences of educational actors and numerical data that allow for identifying significant patterns and trends. This combination was considered the most adequate to answer the research question, since:

- The qualitative approach allows for in-depth exploration of perceptions, attitudes, and experiences regarding internationalization and COIL (Collaborative Online International Learning).
- The quantitative approach facilitates the identification of general trends and the objective measurement of key variables, such as linguistic competencies and acceptance of virtual international learning strategies.

### *3.2. Research Desing*

The study adopted an exploratory–descriptive, non-experimental, and transversal design, given that:

- It seeks to identify emerging trends and describe in detail the dimensions of internationalization, linguistic competencies, and the use of COIL, without manipulating variables.
- A longitudinal design was not considered due to time limitation and the interest in obtaining a current snapshot of the phenomenon in multiple educational contexts.
- A correlational design was not used either, since the main objective is not to measure causal relationships but to describe perceptions and patterns in detail.

### *3.3. Population and Sample*

The research included a diverse and representative population of the educational field in Ecuador, Colombia, and other countries in the region. The total sample was 800 participants, composed of:

- Directors: directors, deans, and program directors.
- Faculty: coordinators of language programs, foreign trade, law, international business administration, tourism, food engineering, medicine, among others.
- Students: secondary education (public and

private schools), undergraduate and postgraduate from REDEC universities (Network of Universities of Ecuador and Colombia).
- Other educational stakeholders: administrative personnel and parents.
- The selection of participants was intentional and convenient, prioritizing those with direct knowledge and experience in the areas of study. Inclusion and exclusion criteria were applied, the response rate was documented, and case losses were recorded. Participation was voluntary, and diversity and representativeness were ensured.

### *3.4. Data Collection Instruments*

Four semi-structured online questionnaires were used, each with 15 items organized into four dimensions of the university's substantive functions: teaching, research, community engagement, and institutional management. The questionnaires addressed:

1. Participants' linguistic competencies.
2. Perception of internationalization in higher education.
3. Attitudes towards COIL as a strategy for international collaborative learning.
4. Indicators of virtual education quality, including accessibility, instructional design, and academic relevance.

#### *3.4.1. Validation of the instruments*

• Content validity was applied through review by experts and academic judges.

• A pilot test was conducted with a reduced sample to adjust clarity, comprehension, and consistency.

• The internal reliability of the questionnaires was calculated using Cronbach's Alpha coefficient.

#### *3.4.2. Focus interviews*

Semi-structured interviews were conducted with 12 faculty coordinators, following a previously prepared guide. The information was analyzed until data saturation was reached and was triangulated with the questionnaire findings to strengthen validity

### *3.5. Sampling Techniques*

Although simple random sampling is mentioned, in virtual educational environments this was implemented through institutional platforms and mass emails, ensuring the greatest possible representativeness within logistical and technological limitations.

#### *3.5.1. Procedures*

1. Identification and contact of key participants.
2. Application of online surveys with Likert scales to measure attitudes and perceptions.
3. Conducting semi-structured interviews with faculty coordinators to complement and validate the information.
4. Coding and analysis of qualitative and quantitative data.

## 4. DATA ANALYSIS

- **Quantitative:** descriptive statistics (frequencies, percentages, measures of central tendency and dispersion) and bivariate analyses (chi-square, t-test, ANOVA) were used to evaluate differences between groups (e.g., Ecuador vs. Colombia, students vs. faculty).
- **Qualitative:** content analysis was applied with open coding, identification of emerging categories, and correlation with quantitative data. Support software (NVivo/Atlas.ti) was used to systematize the information.

**Ethics and Scientific Rigor**

Research ethics were guaranteed through:

- Informed consent of all participants.
- Confidentiality and anonymity of data.
- Approval from an institutional ethics committee, ensuring compliance with international standards.

### *4.1. Methodological Limitations*

The presence of possible limitations is recognized:

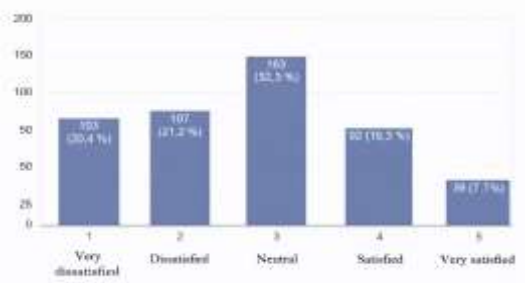
- Self-selection bias in online surveys.
- Limitations in representativeness due to unequal connectivity in some regions.
- Technological restrictions that could affect data collection in certain contexts.

Pregunta

What is your level of satisfaction regarding the virtual education implemented so far?

Figura 1

Satisfaction with Virtual Education.



Survey on the Quality of Higher Education Post-Pandemic and COIL Experiences Response scale:

Response scale:

1 = Very dissatisfied

2 = Dissatisfied

3 = Neutral

4 = Satisfied

5 = Very satisfied

As shown in the preceding graph, 32.3% of respondents are undecided regarding the level of satisfaction with virtual education.

Block 1: Academic Quality and Teaching

¿How satisfied are you with the quality of virtual education implemented in higher education during and after the pandemic, including internationalization experiences such as COIL?

¿How satisfied are you with the pedagogical and technological preparedness of teachers to deliver virtual or hybrid classes?

¿How satisfied are you with the clarity, relevance, and up-to-datedness of academic content offered in virtual mode?

Block 2: Technological Resources and Access

How satisfied are you with the availability and accessibility of technological resources (platforms, devices, connectivity) for virtual classes?

¿How satisfied are you with the technical support provided by the institution to solve technological issues?

¿How satisfied are you with access to digital bibliography and scientific databases during virtual learning?

Block 3: Equity and Inclusion

¿How satisfied are you with institutional policies aimed at ensuring equal opportunities for all students in virtual education?

¿How satisfied are you with the accessibility of educational programs for students with special needs or invulnerable contexts?

Block 4: Internationalization and COIL

¿How satisfied are you with the opportunities to participate in internationalization projects such as COIL?

How satisfied are you with the institutional support to overcome language barriers (e.g., English) in virtual internationalization experiences such as COIL?

¿How satisfied are you with the impact of COIL on your professional training, both academically and interculturally?

Block 5: Innovation and Future

¿How satisfied are you with the incorporation of new methodologies and digital tools in post-pandemic higher education teaching?

How satisfied are you with the university's ability to adapt to future scenarios (possible health, social, or technological crises?

Block 6: Academic English and COIL

¿How satisfied are you with your own level of English proficiency to participate in internationalization projects such as COIL?

¿How satisfied are you with the academic English proficiency in your field of knowledge among teachers and students at your institution?

¿How satisfied are you with institutional support (courses, workshops, training programs) to strengthen academic and disciplinary English skills?

¿How satisfied are you with the importance given by universities to English language learning as a medium of international communication in higher education and COIL?

¿How satisfied are you with the opportunities provided by your institution to practice and use English in real contexts (virtual exchanges, COIL, conferences, joint projects?

### *4.2. Questionnaire Development and Pretest*

Percepción de la Calidad de la Educación Virtual

Perception of the Quality of Virtual Education Please answer the following questions honestly according to your perception, your context, and the institution you are affiliated with

- Country of residence
- What is the role from which you will submit the responses?
- Education level to evaluate
- Character of the institution to evaluate?

**Teachers and Students**

- Do Students have the mental availability, attitude, and discipline to continue their educational process in the virtual modality?
- Have Students had sufficient preparation to undertake the educational process in the virtual modality?
- Do teachers have the mental availability, attitude, and discipline to continue the educational process in the virtual modality with quality?
- Do teachers have sufficient training to undertake the educational process in the virtual modality with quality?
- Have teachers had sufficient time and a professional design support team to generate virtual learning objects with quality?
- Does the Institution remunerate teachers for the hours dedicated to the construction of virtual courses?

#### *4.2.1. Educational Resources*

- Do you have sufficient internet connection to undertake education in the virtual modality?
- Do you have sufficient technological tools and physical means to undertake the educational process in the virtual modality with quality?
- Have you effectively used the electronic library and databases?
- Are adequate processes observed for the design, management, production, distribution, and use of materials and resources, of the fully developed program curricular plan, as well as monitoring, auditing, and verification actions of the technological platform's operation?

**Academic Processes**

- Are the academic processes defined adequately and clearly?
- Does the evaluation methodology guarantee learn?
- Are the feedback spaces between teachers and students sufficient?
- Do you believe that the teaching and learning process addressed will guarantee success for the graduate?
- Have the pedagogical and didactic means that will serve for the development of autonomous learning, in articulation with the proposed pedagogical model, been defined?
- Is the work to be developed and the required dedication times for the student with accompaniment and autonomous work clear?

 Have tools been used that allow interaction between students?

Research and Social Outreach

 Are there sufficient tools available to give continuity to research projects?

 Are there sufficient tools available to give continuity to Social Outreach projects?

Academic, Administrative, and Financial Structure

 Has efficiency and effectiveness been demonstrated in the academic and administrative processes in the virtual modality?

- Has the capacity to offer education in the virtual modality been demonstrated through a participatory self-evaluation process?
- Do you observe that the Institution has invested sufficient resources in virtual education?
- Is it observed that the organizational structure guarantees support for the design, production, and assembly of educational materials, the maintenance service, and the follow-up of students, teachers, and support staff?

**Well-being**

- Has the Institution provided adequate well-being programs and activities in the virtual modality?
- Do you observe adequate institutional strategies to Motivate Students and prevent dropout?
- Was the Institution prepared to offer quality education in virtual modality?
- Do you consider it pertinent to dedicate more time to the correct planning of education before continuing with the educational process in the virtual modality?
- What is your level of satisfaction with the virtual education implemented so far?
- What would you like to see improved in the implementation of the virtual education modality offered to date?

### *4.3. Sampling Techniques*

The sampling technique will be simple random sampling so that all elements have the same opportunity to be included in the sample.

Field Work

For the development of this analysis, data obtained from the survey conducted on the perception of the quality of online education was taken into account.

***Figure 2: Country of residence.***

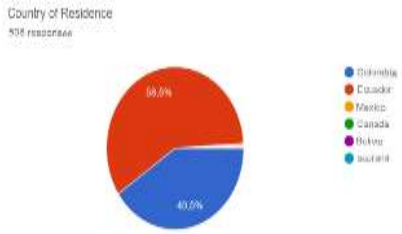



***Figure 3: Role of the respondent.***

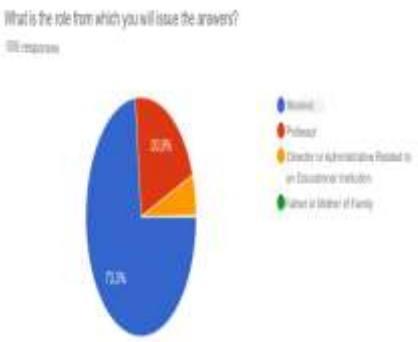



***Figure 4: Education level***

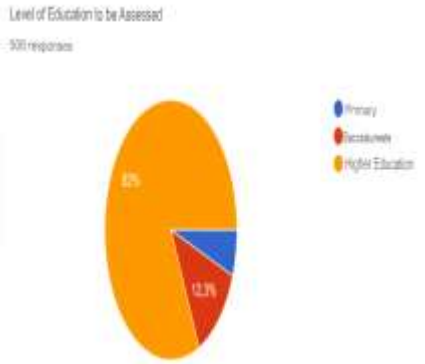



***Figure 5: Character of the institution to evaluate***

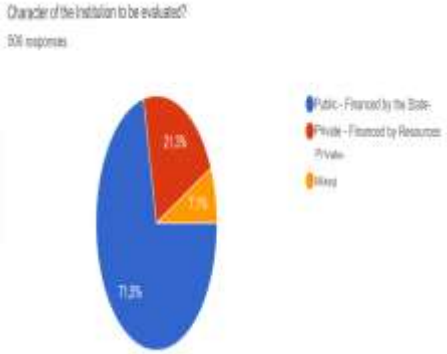



**Figure 6:** *Student Availability*

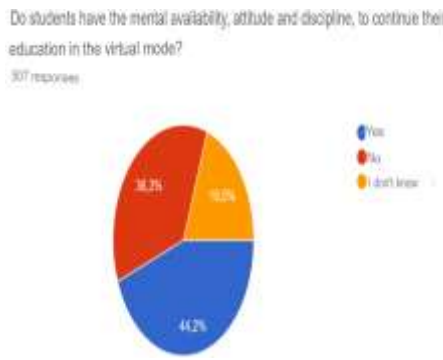



**Figure 7:** *Student Preparation*

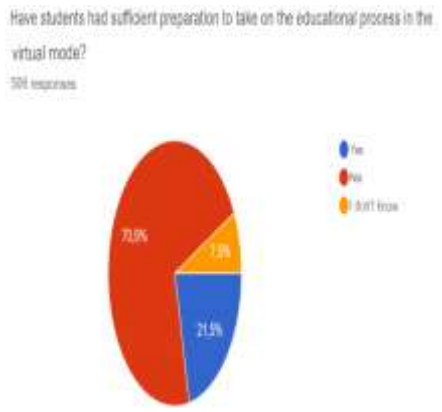



***Figure 8: Teacher Availability***

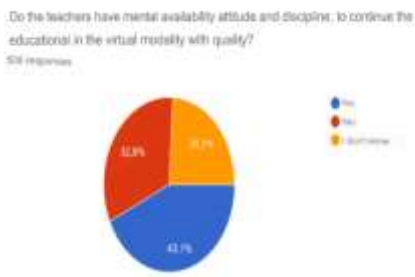



***Figure 9: Teacher Training***

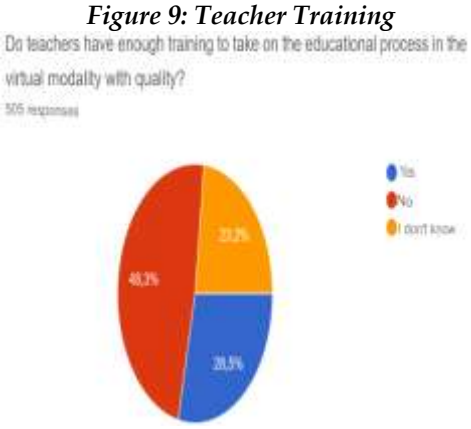



***Figure 10: Teacher Time to Generate Virtual Learning Objects***

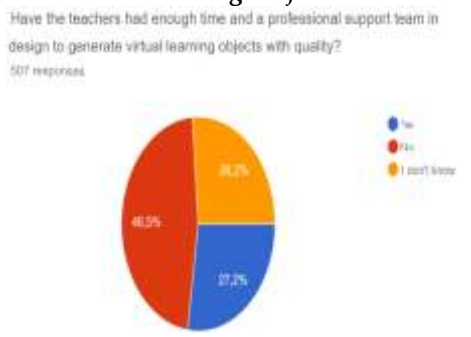



***Figure 11: Teacher Remuneration per Hour***

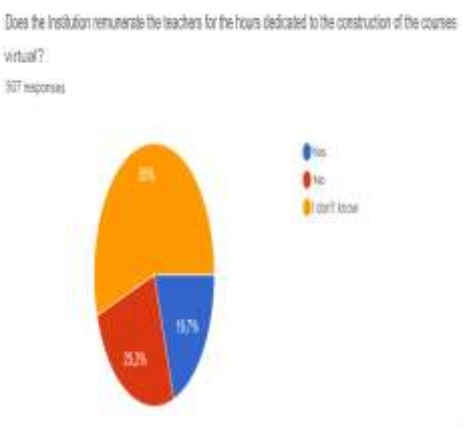



*Figure 12: Internet Connection*

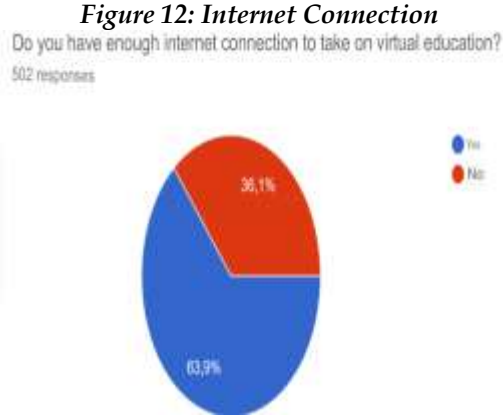



*Figure 13: Technological Tools*

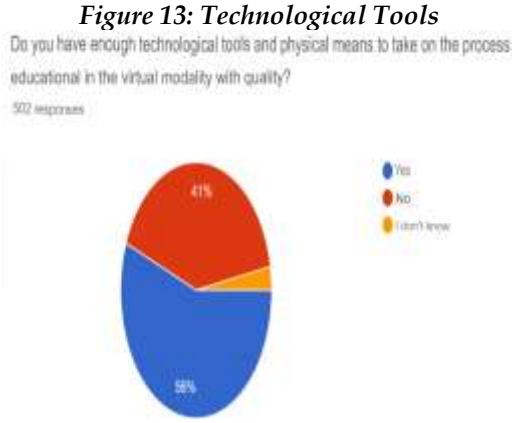



*Figure 14: Use of Libraries and Databases*

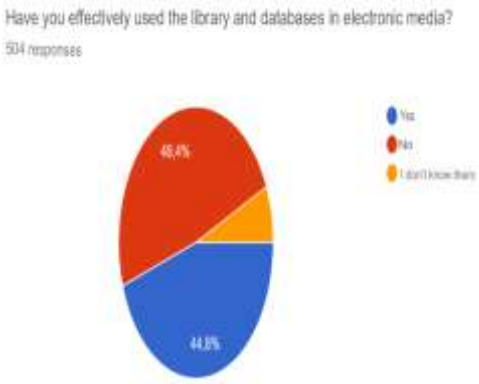



*Figure 15: Processes for the Technological Platform*

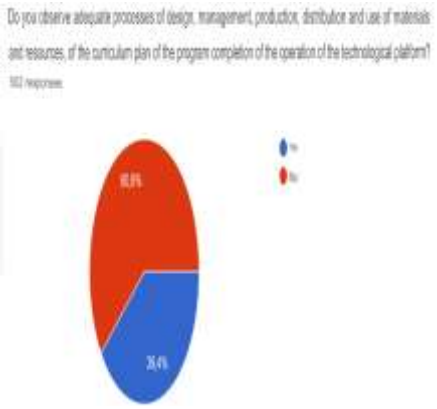



*Figure 16: Academic Processes*

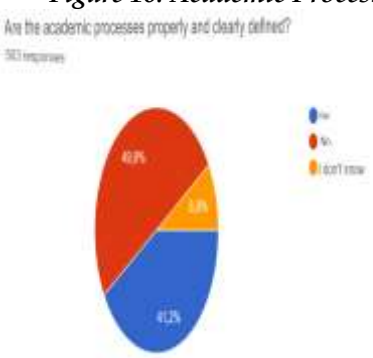



*Figure 17: Evaluation Methodology*

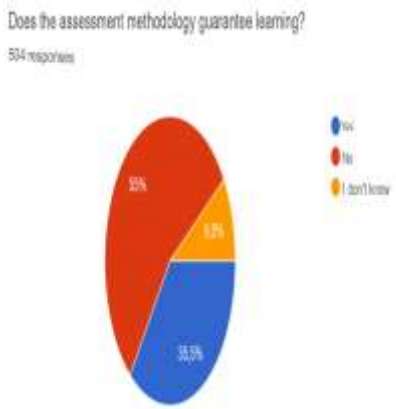



*Figure 18: Feedback Spaces*

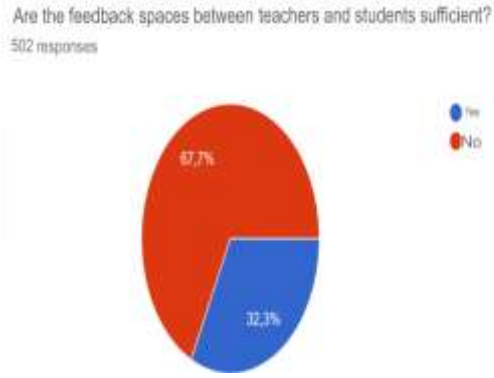



*Figure 19: Graduate Success*

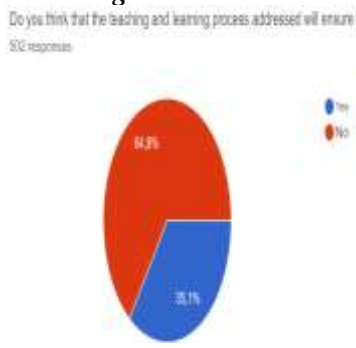



*Figure 20: Pedagogical and Didactic Means*

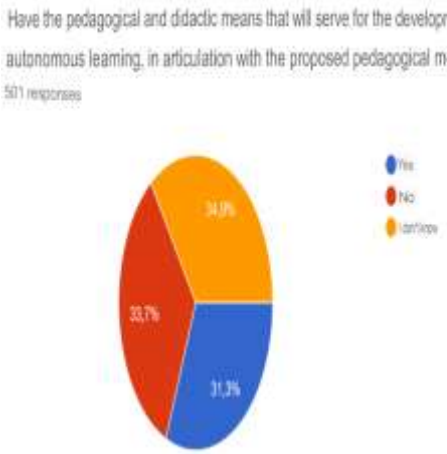



*Figure 21: Clarity of Work*

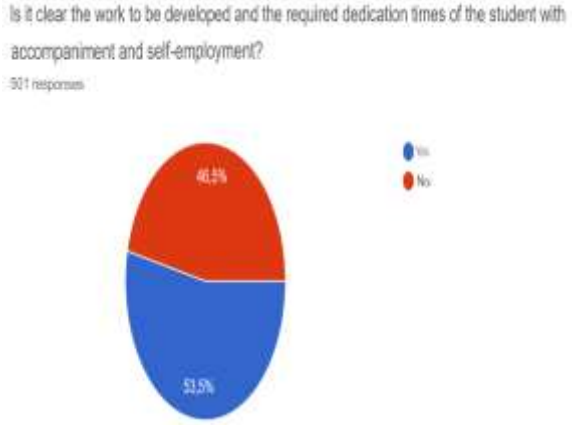



*Figure 22: Tools for Student Interaction*

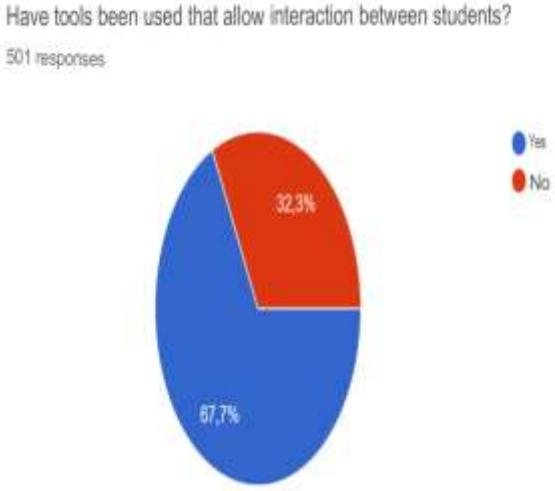



*Figure 23: Tools for Research Project Continuity*

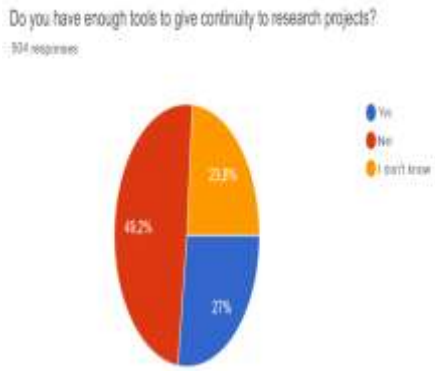



***Figure 24: Tools for Social Project Continuity***

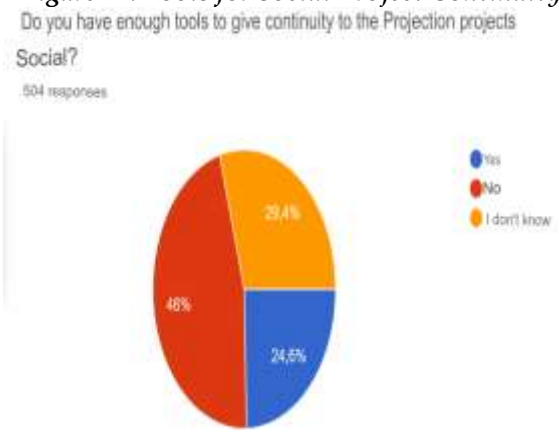



**Figure 25:** *Efficacy and Efficiency in Academic and Administrative Processes*

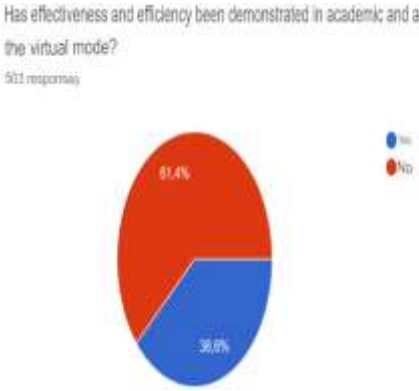



***Figure 26: Capacity to Offer Virtual Education***

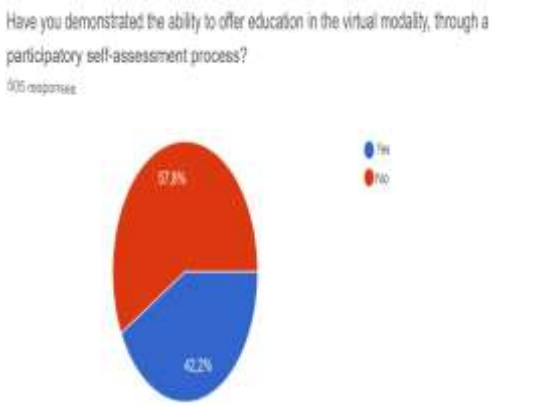



***Figure 27: Investment of Resources for Virtual Education***

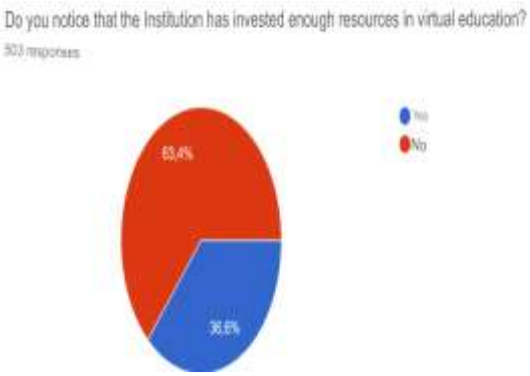



***Figure 28: Design of Production and Assembly of Educational Materials***

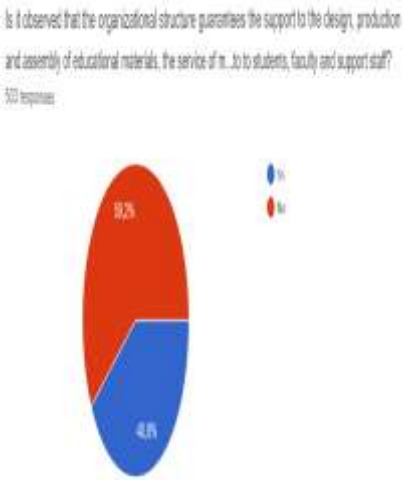



***Figure 29: Well-being in the Virtual Modality***

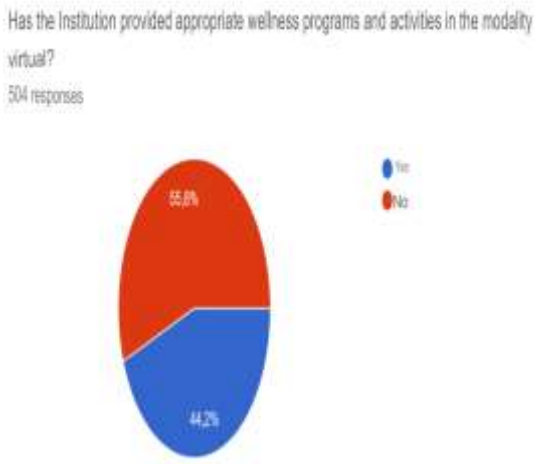



*Figure 30: Student Motivation to Prevent Dropout*

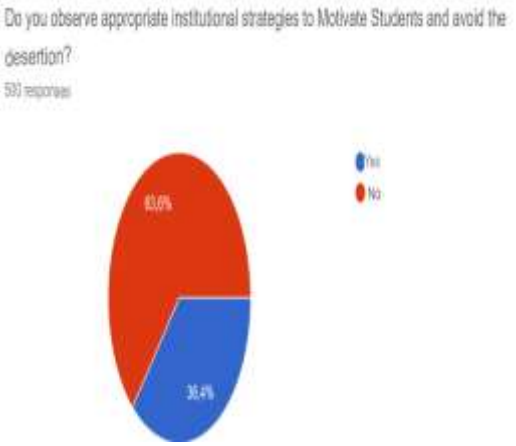



*Figure 31: Preparation for Virtual Education*

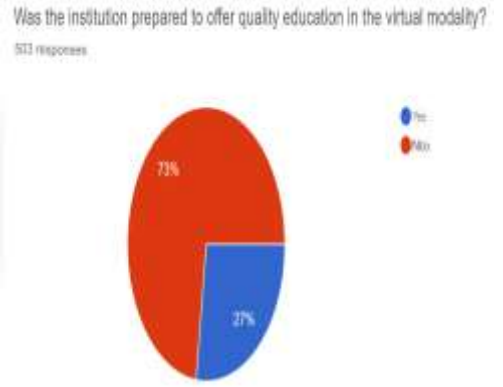
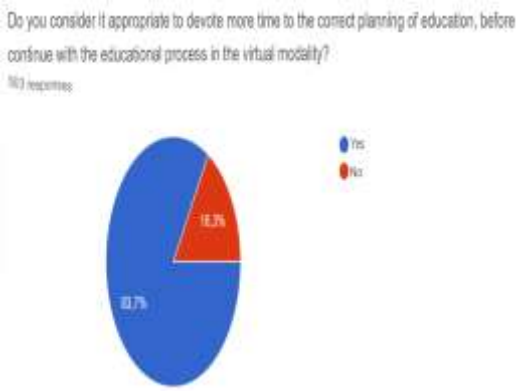



*Figure 32: Time for Educational Planning.*




### *4.4.Results And Discussion*

It is a documentary bibliographic study because secondary sources were used to understand the research. It has also been supported by academic and social research. Once the information was analyzed, it is found that the abrupt change in implementing the virtual education modality in the process of training future professionals in the Universities of Ecuador, with little consideration for the academic staff's mastery of pedagogical and technological competencies, ended up leading to the realization of a traditional education, despite the massive implementation of technological resources.

This allowed us to establish a basis for systematizing very specific information and being able to support the criteria detailed in the conclusions as research findings.

The methodology to be used in the research is also a mixed approach, as the information collected through direct survey will be analyzed. Depending on who answers the test, the survey is strictly aimed at these people who have a direct relationship with virtual education because they are the ones who have full knowledge of both its origin and its current state. The questions are both open and closed, so that the respondent has the necessary scope to explain their point of view.

The scope of the research topic is non-experimental and transversal, because the problem will be analyzed at a specific date. The topic is a descriptive type of research, because historical and current data on virtual education during the pandemic and after having to return to normality will be evaluated, the information collected will be closer to reality, which will allow for descriptively informing about the situation in the field of virtual education.

### *4.5. Data Analysis Plan*

The data analysis plan for this present research will be carried out with the following activities:

- Answering the questionnaire questions by Students.
- Answering the questionnaire questions by Professors.
- Answering questionnaire questions by Director or Administrative Staff affiliated with an Institution.
- Answering the questionnaire questions by Parent.
- The data from all applied questions will be tabulated.
- Questions related to the study problem will be selected.
- Analysis groups between men and women will be defined.
- National and international educational institutions will be defined.

According to the survey used for the analysis of quality in post-pandemic higher education, the following was observed:

The respondents are mostly of Ecuadorian and Colombian nationality , performing the role of students at 73.3% and professors at 20.9%. 82% of those who answered this survey belong to higher education.

Students: 44.2% have the mental availability, attitude, and discipline to continue their educational process in the virtual modality ; however, 70.9% state that they have not had adequate preparation to continue their education in this new modality.

Teachers: 43.1% have the mental availability, attitude, and discipline to continue the educational process in the virtual modality with quality ; however, 48.3% state that they do not have sufficient training, and 23.2% do not know if teachers are prepared to deliver quality virtual education.

Time/Support: 72.7% do not know or are unaware if teachers have the time and support to develop virtual material that serves as a tool for quality learning.

Remuneration: In the development of virtual courses, 66% of respondents do not know if higher education institutions remunerate teachers, and 25.2% indicate that this time is not remunerated

Connectivity/Tools: 63.9% mention that they do have internet access, and 56% likewise indicate that they do have technological tools to carry out the virtual education process with quality.

Resources/Processes: More than 50% have not adequately used or are unaware of electronic libraries and databases, and furthermore, 60.6% indicate that adequate processes for the design, management, production, distribution, and use of materials and resources on technological platforms are not observed.

Academic Processes/Evaluation: Around 60% of respondents indicate that academic processes are not defined adequately and clearly and that the evaluation methods used do not guarantee student learning; furthermore, 67.7% mention that there are insufficient feedback spaces between teachers and students.

Graduate Success: 64.9% indicate that the teaching and learning process used in virtual education will not guarantee the success of graduates.

Research/Social Projects: Approximately more than 60% mention that they do not have the tools that allow them to continue their projects or are unaware of the topic.

Efficacy/Investment: 61.4% indicate that efficiency and effectiveness have not been demonstrated in the academic and administrative processes in the virtual modality, since educational institutions have not invested sufficient resources for the development of a virtual education model

Well-being/Motivation: Approximately 60% state that educational institutions have not provided adequate programs and activities to contribute to the well-being and motivation of students in the virtual modality and thus prevent dropout.

Preparation: 73% consider that educational institutions were not prepared to offer quality education in the virtual modality upon the arrival of the COVID-19 pandemic.

Planning: 83.7% of respondents consider it pertinent to carry out a restructuring to improve the planning of education before continuing with the educational process in the virtual modality

Analysis of the Blocks

The pandemic left a great lesson, as many educational institutions were not prepared to teach virtual classes. But some countries already had experience using technological tools to deliver online classes, as is the case of the State University of New York, which created an online teaching methodology, all with the aim of interrelating teachers and students with other cultures through technology, in different parts of the world without the need for physical movement, only through a computer and internet connection. Here it could be said that COIL was born as the instrument that opened the doors to a new interconnected world, with new challenges and different barriers, including the language barrier. Given the preceding conditions, many questions arise for educational institutions that are just getting to know and starting in this COIL system, which will be mentioned below.

***Tabla 1: Analysis of the blocks in the COIL methodology.***

| Block | Analysis |
|---|---|
| Block 1 | "COIL offers pedagogical resources for teachers, especially for those who do not yet have the necessary experience to teach online classes. Similarly, within online courses, professors can exchange knowledge and pedagogical methods that benefit the class. " "It is important to emphasize that the teacher must prepare the class in advance, so they need to be coordinated with their counterpart; therefore, the participation of the teachers must be distributed equally. This is where the teacher plays an essential role in planning and preparing the activities that will be developed within the course. Likewise, they must be prepared to solve any difficulty that may arise, including schedules, course connection days, whether they will be synchronous or asynchronous classes, and identifying the space the student must receive the class; therefore, preparing an online class involves quality time." |
| Block 2 | It is key to having a good internet connection to be able to develop an online class, which guarantees the normal flow and development of it. All this with the purpose that students have participation within the virtual classroom, to generate interaction among themselves, and thus be able to get to know each other, share about their culture, or tell experiences based on the topic discussed in class.<br>It should be considered that many students do not have the technological resources for the development of the activities to be carried out within the COIL program. Therefore, many of the tasks will be done with students from another country, not only to create contact with these people but also so they will work together to complete the tasks assigned by the teachers. Given this, it is essential that the student has a computer or tablet and a cell phone, in addition to the internet connection. Consequently, if the COIL methodology is applied, it is crucial that the university verifies that all students entering the COIL program have these resources. If the case is negative, the tools that the student needs must be provided so that they can manage all the exercises that the teachers set. |
| Block 3 | As mentioned earlier, there are cases where students do not have all the technological resources for the development of activities in the COIL program. Therefore, the institution must conduct a survey to identify which students have tools for carrying out the activities in the COIL program and which students do not have these tools. In such cases, it is essential to provide a pertinent solution, such as the use of institutional equipment and utilizing spaces with Wi-Fi within the institution that facilitate online education. It should be noted that the Wi-Fi zones must have a good connection to avoid any type of interruption when class is in session.<br>On the other hand, it is substantial that teachers have job stability because it allows the teacher to develop professionally, reflected in high-quality projects and work. Likewise, the planning must be at least one year in advance to start an international class, allowing the teacher time to prepare, increase skills and competencies in this new form of teaching, and even more so if it is in another language, generating greater quality in education. |
| Block 4 | Institutions have a fundamental role in encouraging teachers to participate in COIL programs. Therefore, it is appropriate to incentivize teachers by pointing out that it is a good experience to be acquired with benefits within the curriculum, as it is a new form of teaching. Consequently, the university must provide the necessary support to implement the new work tools, offer communication, ICT, and pedagogical strategies. Furthermore, it must commit to promoting the internationalization of education at all stages.<br>The teacher who starts in the COIL program will not only learn to interrelate but will also develop different digital technology skills that will help them perfect their teaching and learning abilities. In the case of students, they will develop new global communication skills, learn to work in a team with another culture, and also learn to solve problems in the context of a globalized world. It is clearly observed that both the teacher and the student will benefit from the COIL program. At the same time, opportunities for digital competence, the exchange of knowledge, and the strengthening of capacities in both ICTs and the area of study in which the COIL program is developed are being created. |

| | |
|---|---|
| Block 5 | The future of educational institutions is based on how well prepared they are for digital education. Now, if a COIL program is to work, both the university and the teachers must be prepared, which means that it is necessary to create innovative and didactic activities to implement in digital classes. The teachers conducting the class must employ novel pedagogical techniques that allow students to break the ice, relate, and get to know each other.<br>It should be added that the student needs to be motivated to commit to a new activity. Therefore, that motivation can be linked to the fact that participation in the COIL program is part of a practical activity, and the student would be recognized with an extra grade for class participation and for the work carried out. |
| Block 6 | One of the advantages offered by the COIL program is the interaction with foreign English-speaking or other-language-speaking students, which not only allows for language practice with people in their native language but also for getting to know their customs and culture (the same is reciprocal).<br>Based on the previous considerations, it is of utmost importance that the teachers participating in the COIL program must have proficiency in English (or the language to be used in the course) to be able to lead the class. The institution should hire teachers who speak at least two languages, especially in careers where English is crucial for job opportunities, such as: tourism and hotel management, foreign trade, international relations, diplomacy, public relations, international business, and information technology, among others. All this opens a door for both personal and professional enrichment, in such a way that the language barrier is gradually reduced.<br>It is important to consider that when starting COIL programs with Anglo-Saxon countries, the time difference can be an obstacle apart from the language. Therefore, the teachers who are in the program must plan class schedules very well, also considering the holidays that the participating countries in the COIL program may have. |

The main findings show a favorable attitude of students towards COIL as part of their training.

Interest in Internationalization

82% of students consider that COIL would facilitate interaction with international peers, broadening their academic and cultural vision.

**Linguistic Competencies**

76% stated that participating in COIL projects would improve their fluency and confidence in English, while 69% indicated that it would also strengthen their academic Spanish in international contexts.

**Digital Competencies**

71% indicated feeling motivated to develop new digital skills and virtual collaborative work through COIL.

**Perception of Relevance**

85% of respondents believe that COIL should be compulsorily integrated into the curriculum of English undergraduate degrees.

From the interviews with teachers, the necessity of pedagogical training in COIL, the importance of institutional support, and the advisability of including COIL as a criterion in university accreditation processes emerged.

### *4.6. Discussion*

The results corroborate what is stated in the literature: the COIL constitutes an effective way to promote internationalization at home, the improvement of bilingualism, and the development of global competencies. The enthusiasm of students in Ecuador and Colombia reflects a positive predisposition towards this methodology, which coincides with findings from previous experiences in Europe and North America (O'Dowd, 2021; Helm, 2019).

However, challenges persist related to teacher training, technological infrastructure, and the need for institutional policies that ensure the sustainability of these projects.

Legal Framework for COIL Implementation

The implementation of Collaborative Online International Learning (COIL) in Ecuadorian and Colombian universities must also be analyzed from the perspective of the right to education, understood as a fundamental human right guaranteed in both national constitutions and international instruments.

Constitutional Recognition

Ecuador. The Constitution of the Republic (2008) in its article 26 establishes that "the education is a right of individuals throughout their lives and an inescapable and inexcusable duty of the State," recognizing it as a priority area of public policy. Article 27 highlights that education must be inclusive, equitable and of quality, promoting access to new technologies.

Colombia. The Political Constitution (1991) in its article 67 provides that "the education is a right of the person and a public service that has a social function," indicating that it must guarantee comprehensive training and equality of opportunities.

In both countries, the incorporation of

methodologies like COIL aligns with this mandate, by promoting inclusive internationalization and equitable access to global experiences.

### *4.7. International Framework*

UNESCO (2019): recognizes that States have the primary obligation to guarantee the right to education, ensuring access, equity and quality.

Agenda 2030 – Sustainable Development Goal 4 (SDG 4): proposes "ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all".

The integration of COIL projects directly contributes to the achievement of this goal, by broadening internationalization opportunities without physical mobility barriers.

### *4.8. State Obligations*

International and national regulations generate three levels of obligation for States:

1. Respect the right to education, avoiding measures that restrict access to virtual and collaborative environments.
2. Protect this right, regulating institutions offer conditions of equity in connectivity, technological access and teacher training.
3. Guarantee its fulfillment, allocating public investment to reduce the digital divide and allow all students, especially in rural or vulnerable areas, to participate in internationalization projects such as COIL.

### *4.9. Legal Implications*

Under this framework, the implementation of COIL is not limited to pedagogical innovation but constitutes a mechanism for the realization of the right to higher education under conditions of quality, equity and inclusion. This obligates institutions and States to:

1. Incorporate COIL in the accreditation processes and quality assurance of education.
2. Establish financing and connectivity policies that allow overcoming technological barriers.
3. Design teacher training programs in digital and linguistic competencies as a requirement for the full internationalization.

## 5. CONCLUSIONS

The results of this research evidence that, from the perspective of both university students and faculty, post-COVID-19 higher education has faced significant challenges, generating perceptions of lower quality compared to traditional in-person models. The difficulties detected include the limited social interaction, the curriculum overload, and the insufficient adaptation of teaching methodologies to the virtual environment, which directly impacts student motivation, academic performance, and retention.

From the faculty's point of view, it is observed that evaluations and feedback do not always fairly reflect the students' capacities, given the limited interaction in virtual environments. Teachers require strengthening competencies in active methodologies, immersive learning, use of emerging technologies, and intercultural pedagogy, with the objective of fostering critical, strategic, and autonomous learning. Students, for their part, demand closer pedagogical support, curriculum activities adapted to virtuality, and strategies that facilitate their effective participation and intercultural collaboration.

The research also highlights that the pandemic accentuated the inequality in access and educational quality, evidencing digital, socioeconomic, and cultural gaps. This suggests the need for institutional and national policies oriented to guaranteeing inclusion, equity, and connectivity, as well as the provision of complementary support that allows for the full participation of all students.

In this context, the incorporation of the COIL (Collaborative Online International Learning) model is presented as a key strategy for internationalization at home, the development of global competencies, and the strengthening of academic networks. In language programs (English-Spanish), COIL facilitates the acquisition of bilingual, intercultural, and digital competencies through authentic collaboration scenarios.

It promotes the construction of regional and global academic networks, fostering collaborative research, educational innovation, and the virtual mobility of students and faculty.

The strategic implementation of COIL represents not only an innovative response to the challenges derived from the pandemic, but also an opportunity to transform higher education into an inclusive, globalized, and sustainable model, capable of preparing students to face professional and social challenges in an interconnected world.

### *5.1. Recommendations*

It is recommended that educational institutions and authorities design strategic plans that include the curricularization of COIL, international competency certification, monitoring of quality standards, and evaluation of educational and socioeconomic impacts. Effective collaboration between universities and regional bodies, along with the integration of

emerging technologies, immersive learning, and active methodologies, will be decisive to guarantee the success of these initiatives.

The consolidation of Collaborative Online International Learning (COIL) and online higher education programs requires the implementation of policies and strategic actions that strengthen both teaching practice and student experience.

1. Teacher training in COIL methodologies. It is necessary to invest sustainably in the formation of faculty in virtual pedagogical strategies, intercultural communication, and the use of emerging technologies. This will allow them to improve their role in virtual environments, generating more fluid and enriching interaction dynamics.
2. Curricularization of COIL experiences. The compulsory inclusion of COIL modules within the curriculum ensures that all students access international experiences, contributing to the democratization of internationalization and preventing these initiatives from being restricted to reduced groups.
3. International agreements. It is recommended to expand the inter-institutional alliances between universities in Ecuador, Colombia, and other regions, in order to diversify the opportunities for academic cooperation, the exchange of knowledge, and the construction of research networks.
4. International competency certification. It is a priority to design mechanisms for micro-credentials and joint certifications that formally recognize the competencies acquired in COIL projects, strengthening the employability and academic mobility of participants.
5. Joint research. The establishment of collaborative research lines based on COIL experiences can generate scientific knowledge in areas such as pedagogical innovation, interculturality, and digital education, contributing to the advancement of academic literature in these fields.
6. Transformation of the teaching role. Educators must foster the development of critical, strategic, and innovative thinking in students through active and participatory methodologies. This implies shifting from a transmissive role to one of a facilitator and mediator of globalized learning processes
7. Quality standards in online education. Faced with the accelerated growth of virtual offerings, higher education institutions must undergo quality assurance processes, evaluated by governmental bodies and international organizations, guaranteeing relevance, equity, and excellence.
8. Connectivity and digital inclusion. To ensure equity in access, it is indispensable to implement policies of universal connectivity, accompanied by aid plans aimed at students in vulnerable contexts. The prior evaluation of the technological conditions of applicants to virtual programs would allow for the design of more effective inclusion strategies.
9. Implementation of AI Policies in Education: Teaching-Learning in EMI-COIL (English as a Medium of Instruction - Collaborative Online International Learning). The implementation of AI policies in education can significantly improve teaching-learning in EMI-COIL. The following are some suggestions for improvement:

**1. Development of clear policies:**

- Establish clear objectives for the implementation of AI in education.
- Define roles and responsibilities for implementation and supervision.
- Establish protocols for data protection and privacy.

**2. Teacher training:**

- Offer training and support to teachers so they can integrate AI into their educational practice.
- Encourage collaboration between teachers and AI experts to develop effective resources and strategies.

**3. Curriculum design:**

- Incorporate AI skills and competencies into EMI-COIL curricula.
- Develop materials and resources that integrate AI effectively.

**4. Evaluation and monitoring:**

- Establish mechanisms to evaluate the impact of AI on teaching and learning.
- Make continuous adjustments and improvements to the implementation of AI.

**5. International collaboration:**

- Foster collaboration between educational institutions and AI experts internationally.
- Share best practices and resources for the implementation of AI in EMI-COIL.

Implementing these policies, the quality of teaching and learning in EMI-COIL can be improved and students prepared for a world increasingly influenced by AI.

Collectively, these recommendations point to a more innovative, inclusive, and globally impactful

higher education model, where COIL is established as a strategic tool for the formation of international competencies, the generation of collaborative research, and the guarantee of educational quality standards.

### *5.2. Future Trends*

The Collaborative Online International Learning (COIL) model is projected as a strategic component of the internationalization of higher education, with several emerging development lines, including:

1. Integration of emerging technologies. The incorporation of artificial intelligence, virtual reality, and immersive learning environments will enhance the quality of intercultural interaction, allowing for the simulation of authentic scenarios and facilitating communication in multiple languages and contexts.
2. The integration of Artificial Intelligence (AI) in English language instruction for Business Management poses both opportunities and challenges. On one hand, AI can enhance personalized learning, automate administrative tasks, and provide instant feedback, allowing instructors to focus on more complex and creative aspects of teaching. However, it also raises concerns about job displacement, data privacy, and the need for faculty training, highlighting the importance of careful planning and implementation to ensure that AI is used effectively and responsibly in the classroom.
3. Compulsory curricularization. The institutionalization of COIL in language programs and careers related to education is seen as a growing trend. This responds to the need to ensure that all students access international experiences systematically and not only as extracurricular activities.
4. International micro-credentials. The accreditation of global competencies through digital micro-credentials is consolidated as a strategy to recognize specific learning obtained in COIL projects. These certifications grant additional value to the employability and academic mobility of students.
5. Expansion towards multilingualism. Although English has been the predominant language in COIL experiences, there is a push towards the incorporation of other languages, especially Spanish, French, and Portuguese. This shift favors the inclusion of diverse academic communities and enriches interculturality.
6. Inclusion and equity. One of COIL's central goals in the coming years is to guarantee equitable access to global experiences, overcoming economic and geographical barriers. In this sense, the COIL is established as a democratizing tool for internationalization at home.

Collectively, these trends suggest that COIL will evolve towards a more technologically advanced, curriculum-integrated, and socially inclusive model, consolidating itself as a transversal axis of academic internationalization in higher education.

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