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Submitted: July 14, 2023
Accepted: Oct. 01, 2023
Published: Oct. 28, 2023

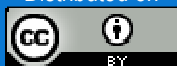
[doi: 10.20396/riesup.v11i00.8673953](https://doi.org/10.20396/riesup.v11i00.8673953)
e-location: e025021

ISSN 2446-9424

Anti-Plagiarism Check



Distributed on



Internationalization at home through virtual mobility in the federal Higher Education Institutions of Santa Catarina

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ABSTRACT

Introduction: the internationalization of higher education, focused on physical mobility, is an activity that is restricted to a few students. With all the restrictions caused by the Coronavirus pandemic, physical mobility was impaired and virtual mobility became the only option for the institutions to maintain their internationalization activities. From the perspective that virtual mobility may contribute to the internationalization at home in higher education institutions. **Objective:** to analyze the development of internationalization at home, through virtual mobility in federal higher education in the state of Santa Catarina. **Methodology:** this is a case study which interviews were carried out with two managers from two federal institutions in the state of Santa Catarina, and a documentary analysis was performed, using content analysis for data discussion. **Results:** the analysis made it possible to identify that there were offers of virtual unities during the pandemic, which were characterized according to the type of offer, language of instruction of the virtual unity, duration, modality, type of certification, target audience, and demanding public. Based on the managers' perception, the facilitators and obstacles for such offerings were pointed out. **Conclusion:** as the main contribution, a list of actions to be taken by institutions which aim to develop the internationalization of education, through internationalization at home and through the appeal to virtual students with virtual mobility was recommended.

KEYWORDS

Higher education. Internationalization of higher education. Virtual Mobility. Internationalization at home.

Internacionalização em casa por meio da mobilidade virtual nas Instituições de Educação Superior federais de Santa Catarina

RESUMO

Introdução: a internacionalização da educação superior, focada na mobilidade física, é uma atividade restrita a poucos alunos. Com as limitações causadas pela pandemia de COVID-19 a mobilidade física foi prejudicada e a mobilidade virtual passou a ser uma opção para as instituições manterem a internacionalização. Sob a perspectiva de que a mobilidade virtual pode contribuir para a internacionalização nas instituições de educação superior.

Objetivo: analisar o desenvolvimento da internacionalização em casa por meio da mobilidade virtual nas instituições de educação superior federais do estado de Santa Catarina. **Metodologia:** Trata-se de um estudo de caso, no qual foram realizadas entrevistas com dois gestores de duas instituições federais do estado de Santa Catarina. Foi realizada análise documental, utilizando-se da análise de conteúdo para a discussão dos dados.

Resultado: a análise permitiu identificar que houve ofertas de unidades virtuais no período pandêmico, as quais foram caracterizadas quanto a: tipo de oferta, língua de instrução, duração, modalidade, tipo de certificação, público-alvo e público demandante. Foram apontados, com base na percepção dos gestores, os facilitadores e os dificultadores para tais ofertas. **Conclusão:** como principal contribuição da pesquisa, foi elaborado um rol de ações a serem tomadas pelas instituições que tenham como propósito desenvolver a internacionalização da educação, por meio da internacionalização em casa e por meio da atração de estudantes internacionais para a mobilidade virtual.

PALAVRAS-CHAVE

Educação superior. Internacionalização da educação superior. Mobilidade virtual. Internacionalização em casa.

Internacionalización en casa por medio de la movilidad virtual en las Instituciones Federales de Educación Superior de Santa Catarina

RESUMEN

Introducción: la internacionalización de la educación superior centrada en la movilidad física es una actividad restringida a pocos estudiantes. Con las restricciones causadas por la pandemia de la COVID-19, la movilidad física se vio perjudicada y la movilidad virtual se transformó en una opción para que las instituciones pudieran mantener la internacionalización. Desde una perspectiva de que la movilidad virtual puede contribuir a la internacionalización en las instituciones de educación superior. **Objetivo:** analizar el desarrollo de la internacionalización - at home - en casa - por medio de la movilidad virtual en las instituciones de educación superior federales del estado de Santa Catarina. **Metodología:** trata-se de un estudio de caso, en el que se realizaron encuestas con dos gerentes de dos instituciones federales del estado de Santa Catarina. También se llevó a cabo un estudio documental, por medio del análisis de contenido, para discutir los datos del corpus seleccionado.

Resultados: el análisis permitió identificar que hubo ofertas de unidades virtuales en el período de la pandemia, que fueron caracterizadas con relación al: tipo de oferta, idioma de instrucción, duración, modalidad, tipo de certificación, público objetivo y público solicitante?. Los gerentes señalaron los facilitadores y los obstáculos de esas ofertas. **Conclusión:** como principal contribución, se elaboró un listado de acciones que deben ser llevadas a cabo por las instituciones cuyo fin sea desarrollar la internacionalización de la educación, a través de la internacionalización en casa y la atracción de estudiantes internacionales a la movilidad virtual.

PALABRAS CLAVE

Enseñanza superior. Internacionalización de la enseñanza superior. Movilidad virtual. Internacionalización en casa.

CRedit

- **Recognition:** Not applicable
- **Financing:** Not applicable
- **Conflicts of interest:** The authors certify that they have no commercial or associative interest that represents a conflict of interest in relation to the manuscript.
- **Ethical approval** Not applicable
- **Availability of data and material:** Not applicable
- **Author contributions:** Conceptualization: Santos dos Passos, C. G.; Stallivieri, L.; Data Curation, Research, Formal Analysis, Methodology, , Writing - original draft; Proofreading & editing, Project Management, Visualization: Santos dos Passos, C. G.; Supervision; Validation: Stallivieri, L.

Section Editor: Andréia Aparecida Simão

1 Introduction

Although the internationalization of higher education has occurred since the emergence of the university, physical mobility is one of the activities that have grown the most in recent years, despite still being restricted to a few students. The internationalization of higher education is understood “as a process of integrating international, intercultural or global dimension into the purpose, functions and delivery of post-secondary education” (Knight 2003, p. 2), going beyond the basic functions of teaching, research, and extension. Internationalization at home is defined as “the purposeful integration of international and intercultural dimensions into the formal and informal curriculum for all students within domestic learning environments” (Beelen, 2015, p. 69), especially aiming to develop their intercultural competencies to act on global scenarios.

Regarding the practice of institutions’ internationalization, studies show that academic mobility is one of the pillars that stands out the most (Stallivieri, 2017). In the year 2000, 1.2 million students participated in international activities worldwide. The expectation for 2025 was that there would be 7.2 million students moving around the globe (Knight, 2020).

However, with the advent of the COVID-19 pandemic, there was a growing movement towards internationalization through mobility. This is because, with rapid transmissibility, the virus caused a collapse in health systems, causing the World Health Organization to recommend the restriction of international travel for emergencies, humanitarian aid, and repatriation (WHO, 2020), compromising the plans of many scholars in mobility.

In this context, an already known solution was resumed: virtual mobility, which is the central theme of this study. The aim is to understand the dimensions of virtual ingoing mobility, seeking to outline its contribution to internationalization at home in higher education institutions (HEIs).

With physical mobility hampered, virtual mobility presents itself as the solution for scholars and institutions to obtain the benefits that international experience can provide. Virtual mobility emerged in the context of language teaching more than 25 years ago (O’Dowd, 2016; O’Dowd, 2018; Barbosa; Ferreira Lopes, 2021), and it is also known as virtual exchange, among others. This diversity of nomenclatures demonstrates the growing interest in teaching-learning activities mediated by online technology and their adaptability in different contexts (O’Dowd, 2018).

Even though it is very prominent in the internationalization scenario, the international students’ physical mobility in Brazil is still very low. In the period from 2019 to 2020, Brazil sent 81,882 students abroad, while it received 21,803 scholars (UNESCO, 2020). This imbalance should be on the agenda when discussing the objectives of internationalization (Stallivieri, 2019). Receiving virtual international students and living in a multicultural classroom are actions that can contribute to internationalization at home in a HEI (Beelen; Jones, 2015), and, therefore, the virtual unit offer should be strategy for advancing this process.

In this research, virtual units are understood as any action promoted by the HEI to attract virtually international students and promote internationalization at home. It is believed that such offer can help HEIs to develop their internationalization process at home, increasing the number of international students who participate in exchange programs in the country, even if virtually, expanding the possibilities of intercultural exchanges between academics.

Virtual internationalization involves a series of activities carried out on a virtual environment, with the aim of internationalizing education. Stallivieri (2021) states that virtual internationalization is “the intentional process to integrate an international, intercultural or global dimension into the objectives, functions and provision of higher education, with the support of information technologies and communication” (Stallivieri, 2021, p. 14).

The main characteristics to differentiate what is virtual internationalization from what is a distance learning course are the “international,” “global,” and “intercultural” aspects of the proposal, according to the definition proposed by Knight (2003). It is not enough to have a course on an online platform; the development of the activity should focus on developing global, international, and/or intercultural skills. Corroborating Knight, Bruhn (2016) also states that the act of enrolling a student from anywhere in the world does not necessarily mean that internationalization is taking place. Internationalization, according to the author, involves including global components in the curriculum at home, whether on campus or on online distance learning.

UNESCO is developing a project which studies the effects of the COVID-19 pandemic on student mobility, analyzing the potential of virtual student mobility (VSM). Although there are different names to refer to internationalization and virtual mobility and there are also differences in the performance of these activities, it is observed that the common point between them is to add international, global, and intercultural aspects in students’ training. O’Dowd (2018) recognizes that there are positive and negative points in the diversity of names and synonyms for these activities. A positive point is that such diversity shows that this methodology has proven to be adaptable to different pedagogical objectives and different learning contexts. Another favorable feature is to be “considered in some quarters as a valid option for providing an international experience for those students who are unwilling or unable to engage in physical mobility programs” (O’Dowd, 2016, p. 292).

The implementation of these methodologies may encounter some difficulties. The diversity of names, as already mentioned, makes it difficult for a greater number of people, especially educators, researchers, and decision makers, to be aware of these proposals (Rubin, 2016). Furthermore, limited access to technology, limitations in digital skills, time zone differences in synchronous activities, and institutional resistance in implementing the approach are difficulties highlighted by O’Dowd (2018).

On the other hand, the same author suggests that HEIs provide formal recognition, in the form of awards, to professors who develop virtual exchanges (O’Dowd, 2021). From an

administrative point of view, the author recommends that virtual exchange be integrated into the curriculum and that students be recognized for participating in such activities. From a pedagogical point of view, O'Dowd (2021) highlights the need to balance synchronous video activities with asynchronous text-based activities. Furthermore, he suggests balancing more formal activities, around the proposed content, with activities of communication and interaction between students. It is also necessary to prepare students on how to interact on a virtual environment with people from other cultures. It is also necessary to select the topics to be worked on, so that they allow students to interact in depth with their colleagues and not fall into superficiality (O'Dowd, 2021).

For the International Institute for Higher Education in Latin America and the Caribbean (UNESCO IESALC), one of the advantages of VSM is the low cost, compared to physical mobility, in addition to the reduction in carbon emissions generated by international travel. As challenges, UNESCO mentions the fact that VSM is seen by students, families and employers as an inferior activity to physical mobility, but considers that, although different, VSM can be used as a complement or alternative to physical mobility. Another challenge is the digital exclusion suffered in many countries, where a significant portion of the student community does not have access to technology and the Internet, as well as to the opportunities derived from this access. According to Unesco IESALC, this challenge can be faced by means of partnerships.

UNESCO IESALC also points out the need to maintain an evaluation mechanism to guarantee the quality of VSM at all stages. Points to be assessed include: infrastructure limitations, language barriers, quality of courses and diplomas, and differences in implementation between institutions. There are four areas, according to UNESCO IESALC, that an assessment mechanism should address.

Considering the challenges and difficulties in implementing such methodologies, it is observed that the use of technologies can help in the internationalization of higher education, so that it reaches a greater number of scholars. If previously technologies were often seen as barriers in the classroom, the pandemic has shown that their use can be an important aid in the educational context (Barbosa; Ferreira Lopes, 2021). According to these authors, scholars in the field believe that the inclusion of intercultural virtual collaborations in the curriculum is a trend that is here to stay, as it ends up enabling an internationalization of education that reaches all students, and not just those who are able to go on an international trip (Barbosa; Ferreira Lopes, 2021).

Given the above and the relevance of the theme, the objective outlined in this study was to analyze the development of the internationalization process at home through virtual mobility in federal HEIs in the state of Santa Catarina (SC).

The research is justified by its relevance, opportunity, and feasibility (Roesch, 2013). Its contribution to education and society is recognized by theorists (Knight, 2003; Hudzik, 2011; De Wit, 2013; Stallivieri, 2017) and by institutions as an activity that adds value to institutions

and students, providing them with a more humanized training, which respects differences and promotes culture and education for peace.

The initial geographic scope of this research corresponds to the four federal HEIs of Santa Catarina: Federal Institute of Education, Science and Technology of Santa Catarina (IFSC), Instituto Federal Catarinense (IFC), Universidade Federal de Santa Catarina (UFSC) and Universidade Federal da Fronteira Sul (UFFS). Research into the Institutional Development Plan (PDI) of HEIs demonstrates aspirations regarding internationalization in education, in addition to recognizing the importance of ingoing mobility, confirming the relevance of the study. It is understood that the research will be able to show the factors that differentiate them regarding internationalization, since they have characteristics that make them similar, but also others that distinguish them. This analysis will contribute to outlining management actions that can improve the provision of virtual units for HEIs that wish to develop internationalization at home through virtual mobility.

The opportunity is justified by the disruption caused by the pandemic, which “should be embraced as an opportunity to address some of the pernicious and inequitable, albeit unintentional, consequences of existing approaches to internationalization” (Leask, 2020, p. 1388). More than a disruption, this is a time of possibility to change the focus from competition to cooperation (Finardi; Guimarães, 2020). Leask (2020) also states that it is an opportunity to prepare students for the future, whatever it may be. One of the negative aspects of internationalization was the almost exclusive focus on physical mobility, an elite activity that demands high financial resources and has a large environmental impact (Leask, 2020). One of the author’s possible predictions is that in the coming years universities will see a smaller circulation of international students and virtual mobility will be the new reality (Leask, 2020). It takes effort not to return to old practices, rethinking teaching, learning, research, and service in higher education (Leask, 2020).

2 Metodology

The research was characterized as applied in nature (Vergara, 2013, p. 42) due to the need to respond to the effects arising from the COVID-19 pandemic, which impacted student mobility in at least 89% of HEIs between March and April 2020 (Marinoni; Van’T Land; Jensen, 2020). As for the means, it was a multiple case study, since the objective is not to make comparisons, but rather to understand and deepen the topic (Triviños, 1987; Yin, 2015).

The time frame is cross-sectional, as the actions developed during the pandemic period were analyzed (March/2020 until the beginning of 2022). The population was chosen intentionally, considering factors such as essentiality and ease of access (Triviños, 1987). Although the project planned to study the four federal HEIs in the state of Santa Catarina the research was conducted only with the two HEIs that participated in the interview. Interview invitations were sent in December 2021. After insistence, only two HEIs accepted the invitation. Two out of the four HEIs underwent a turbulent management transition during the

research period, which may represent a methodological limitation. The interview was carried out with a manager from the internationalization department of each of the two HEIs that accepted to participate, which were identified as HEI A and HEI B.

Data triangulation was used for data collection and analysis, so that one step fed back into the other, building understanding of the phenomenon studied. The constitution of the corpus respected the rules of exhaustiveness, representativeness, homogeneity, and relevance (Bardin, 2011), as all HEIs were chosen based on the adoption of the same criteria. The four HEIs are located in the same state, subject to similar audiences and demands, respond to the same sphere and legislation, which may allow some conclusions to be drawn after the analysis.

The interview with HEI A (January/2022) was recorded using Google meet; the interview with HEI B (April/2022) was recorded using the WhatsApp application, due to the expiration of the free features of Google Meet. The transcription was done with the help of WhatsApp and Telegram. Data was analyzed using text processing software (Word) and spreadsheet software (Google Sheets).

For document analysis, searches were carried out on the researched HEIs websites looking for official documents on the internationalization of education, which included virtual mobility, specifically ingoing mobility, or policies and actions that promote this type of mobility. Notices and PDI of the two HEIs and the Institutional Internationalization Plan (PII) of one of them were analyzed, since the other does not have PII. Coding was based on the categories and analysis codes established a priori, grounded on the literature (Bardin, 2011).

Table 1. Summary of research development

Analysis categories	Analysis codes	Reference
Cat. 1 – Virtual units for exchange students	Virtual units offer	O'Dowd, 2018
	Absence of virtual units offer	Knight, 2020 Stallivieri, 2021
Cat. 2 – Characterization of virtual units offer	Type of virtual unit offer (subject, course, lecture, webinar)	De Wit; Knight, 1995 Knight, 2020 O'Dowd, 2021 Rubin, 2016
	Virtual unit instruction language	
	Workload (weekly/monthly/semi-annual)	
	Modality (synchronous, asynchronous)	
	Type of certification (validation of credits, registration in academic records, certificate, diploma)	
	Target audience (technician, undergraduate, postgraduate)	
	Demanding public (professors, students, managers)	
Cat. 3 – Factors that contributed to and factors that hindered the virtual unit offer	Legislation	O'Dowd 2018 e 2021; UNESCO IESALC, 2021; Stallivieri, 2019 Hudzik, 2011 Beelen; Jones, 2015 Leask, 2020 Childress, 2009
	Technological structure (hardware and software)	
	Institutional positioning (resistance, support)	
	Availability of resources (human, financial, infrastructure)	
	Stigma as an inferior activity	
	Digital skills	
	Difference in time zone	
Cat. 4 – Management actions to improve the virtual unit offer	Mastery of languages	Knight; De Wit, 1995 Childress, 2009 Hudzik, 2011 Stallivieri, 2017 O'Dowd 2018 e 2021; UNESCO IESALC, 2021 e 2022 De Wit; Jones, 2022
	Integration into the curriculum	
	Balance between synchronous and asynchronous activity	
	Balance between formal and interaction activities	
	Preparation for interaction on a virtual environment	
	Establishment of partnerships	
	Support from the internationalization sector	
	Virtual unit offer diagnostic mechanisms	
	Monitoring mechanisms	
	Assessment mechanisms	

Source: Elaborated by authors

Coding by semantic unit (Bardin, 2011) was done by analyzing excerpts from documents and spaces on websites that spoke of the research theme (internationalization of higher education), funneling towards mobility and virtual ingoing mobility. In this way, the PDIs of the two institutions were analyzed, in addition to notices and information obtained from the websites. The PDI is an institutional document mandatory by Decree No. 5.773/2006 and must contain at least the HEI's mission, objectives and goals, its administrative and

didactic-pedagogical organization, among other elements. After skimming the PDIs, all context units that addressed “internationalization,” “mobility,” “exchange,” “at home,” and “in house” were selected. Fifty occurrences were found at HEI A and 118 occurrences at HEI B, which were highlighted and analyzed with the help of an electronic spreadsheet, discarding results that were not relevant to the research theme. To analyze the PII, the document was read, identifying all content related to “mobility,” “exchange,” “virtual mobility” and “internationalization at home.” The PII establishes the HEI’s guidelines, objectives, and strategic actions in relation to its internationalization process and became mandatory for HEIs that wanted to apply for Capes PrInt, a program created by CAPES Ordinance No. 220, of October 16, 2017.

Data analysis was carried out through content analysis (Bardin, 2011), involving three stages: pre-analysis, analytical description, and referential interpretation (Triviños, 1987), and the enumeration rule chosen was the presence or absence analysis (Bardin, 2011). In the next section, the data obtained will be presented and analyzed, making a brief presentation of the two HEIs that participated in the research, followed by data from interviews, documents, and their correlation with the literature.

3 Data presentation and analysis

The presentation of data from HEI A and HEI B interviews, in that order, occurs simultaneously to the analysis, correlating the results and findings from the literature. Data triangulation allows ideas to be described, explained, and understood according as they are presented (Triviños, 1987).

Federal HEIs of the state of Santa Catarina are composed of two universities and two Federal Institutes (FIs). Although they are subordinate to different secretariats in the hierarchy of the Ministry of Education (MEC) and have differences in their objective of action, they have in common the provision of higher education and the challenges of university management, including internationalization. FIs are not called universities, but they face the same challenges in their management and, therefore, were selected to be part of this research. The interviews were carried out with managers from the internationalization department of HEI A and HEI B, referred to as Manager g1 and Manager g2 to avoid identification. Both are professors and have been working in the field since 2019.

To identify whether virtual units were offered and whether before the pandemic there was already some interest in internationalization at home and in virtual mobility, interviewees were asked how they **describe the internationalization process of their HEIs and whether there had been any change in the way it was conducted as a result of the COVID-19 pandemic**. The expected and found codes at this stage are presented in Table 2.

Table 2. Expected codes and codes found in HEI A and HEI B – Category 1

Expected codes	Codes found in HEI A	Codes found in HEI B
Virtual units offer		X
Absence of virtual units offer	X	

Fonte: elaborado pelas autoras.

Although HEI A has international agreements for receiving students, Manager g1 describes the process aimed only at sending students abroad. According to him, ingoing mobility is hampered due to the language barrier, identifying the difficulty that the HEI faces in offering Portuguese courses to foreigners due to the workload distribution of Portuguese professors. He also pointed out that the pandemic brought virtual mobility as a “new modality” for the HEI, characterizing it as a sustainable modality that promotes greater balance in offering mobility, as can be seen in the following statement: *“due to the pandemic, there was a more careful look at the closest countries, right? [Countries] From Latin America, they were always left aside to send students to Europe, North America. It was very positive.”*

Analysis of HEI A’s documents and information available on the institutional website, which includes mobility notices, shows the absence of virtual units offered to international students. It was possible to observe that there was only virtual mobility offer to send students abroad, through notices from partner institutions, and that scholars went to study abroad.

The manager’s speech allows us to verify the aspects supported by Stallivieri (2019) and Stallivieri and Vianna (2020) as determining factors for responsible internationalization. According to the authors, balance in offering opportunities, especially valuing partnerships with the South and not just with the global North, balance in valuing languages, and environmental and financial sustainability are some aspects that contribute to responsible internationalization,

Regarding the second question, Manager g1 responded that:

*[...] there was a huge **change in the mentality** of the students and professors, as well as in the importance of this because there were already some specific partner programs that offered this type of mobility, but it seems that they were not that important in the students' view, right? It would be more interesting to go there than to stay at home. And today I see that the demand for this modality is increasing more and more. You know? **In the last notice we had twice as much demand as we had the year before.** Yes, there were a lot of people looking for it, which I found very positive. (Emphasis added)*

Analyzing the mobility notices, it is clear that the number of applications increased between 2020 and 2022. Although these are data about outgoing mobility data, it is noticeable that there has been a change in student behavior towards valuing virtual opportunities. The scope of this research analyzes ingoing mobility; therefore, a detailed analysis of these data and the students’ motivations does not fit the purpose of this research.

Although HEI A’s PDI has as one of its strategic objectives the consolidation of internationalization and one of its strategic initiatives is to increase international visibility, the

document does not mention virtual mobility. Promoting mobility, in general, is mentioned as an extension guideline, with the aim of contributing to the exchange of knowledge and technologies, seen by HEI A as a possibility to be achieved through both in-person mobility and virtual mobility.

The HEI A's PDI also lists sustainability as a policy to be developed, presented in its three dimensions: environmental, social and economic, and the document makes it clear that the articulation of teaching, research, extension, and management actions can lead to the reduction of social inequalities. The articulation of policies, such as internationalization, information technology, and sustainability can contribute to each other, establishing connections with the HEI's target areas, thus contributing to the achievement of the HEI's strategic objective, which is to consolidate the internationalization. Another point that deserves to be highlighted in the document is the mention of the expansion of mobility as a consequence of the creation of an institutional internationalization policy. In fact, HEI A does not have a formalized internationalization institutional policy, nor does it have a document that encourages or describes the importance of virtual mobility.

One of the challenges in implementing virtual mobility highlighted by UNESCO IESALC (2021) is the fact that it is often considered an activity inferior to in-person mobility. This stigma as an inferior activity may be related to institutional positioning and justify the lack of support from higher authorities and the community in general, making it difficult to provide human and financial resources (O'Dowd, 2016; O'Dowd, 2018).

Manager g2, in response to the first question, describes internationalization as a growing, non-linear process, with ups and downs. He also highlights that the main difficulty is financial, and the great challenge of managing internationalization is the entire community's involvement in the process.

When analyzing the HEI B's PDI, it is observed that the institution emphasizes the importance of the entire academic community's participation in internationalization actions, treating it as a transversal theme to teaching, research, and extension. The PDI characterizes internationalization through this transversality, understanding that the entire community's involvement contributes significantly to it being reached. Furthermore, the actions are performed with the aim of attracting students, professors, and technicians, also understanding that this attraction contributes to the creation of an internationalized ecosystem. In addition to the PDI, the HEI has the PII, which declares that internationalization is developed based on the six dimensions of transversal internationalization (or comprehensive internationalization, in the original).

The analyzed HEI B's documents make it clear that the institutional positioning is to support and develop internationalization. Both PDI and PII adopt internationalization as a comprehensive process (Hudzik, 2011), detailing the actions and strategies for the HEI to become world class, in a sustainable manner, promoting solidarity and international cooperation.

When asked if there were any changes as a result of the pandemic, Manager g2 answered affirmatively, stressing that the impossibility of carrying out physical mobility has broadened the community's perspective, understanding that internationalization is not just limited to academic mobility. He mentions that: *“This issue of virtual mobility was something that had been brought up for a long time, there was already a call, a desire, but the pandemic kind of pushed it, right? And it sped up and made it happen in a more... quicker manner, maybe.”* Furthermore, he also points out that the lack of physical mobility allowed the sector team to have time to dedicate themselves to other ways of internationalizing education.

Virtual mobility was already mentioned in the literature before the pandemic, under different names, making its understanding and implementation difficult (Rubin, 2016; O’Dowd, 2018). Nevertheless, in practice, it was an undervalued option (UNESCO IESALC, 2021). With the need imposed by the pandemic, virtual mobility found space.

The availability of resources is essential for virtual mobility to happen (O’Dowd, 2018) and the starting point for releasing resources is institutional positioning, promoting support for internationalization actions. When this positioning is intentional support (De Wit et al., 2015), the internationalization department is valued with human, financial, and infrastructure resources, in addition to transversality, which can be observed in institutional documents and in the actions of the school community (Hudzik , 2011).

Manager g2’s speech is in line with the institution’s PDI, which describes internationalization at home and abroad. One of PDI’s strategic initiatives, which aim to meet the objective related to the development of global and intercultural skills, is precisely to offer subjects taught in English to create an international and intercultural environment on all HEI campuses, thus developing internationalization at home. In another section of the PDI, the strategic initiative is aimed at promoting internationalization at home for professors, students, and technicians. Summer and winter courses in English and online courses in Portuguese as a foreign language are offered among the activities described for its consolidation.

In addition to the PDI, the PII makes clear the policies and actions necessary to deepen the internationalization process. Among these actions, there is the virtual unit offer in a foreign language to attract researchers, professors and international students, in addition to promoting language teaching, with emphasis on the English language. In the temporal scope of this research, when visiting the HEI website, on the internationalization department page, the following notices and documents with the potential to attract international students were found: catalog of subjects taught in a foreign language, virtual extension courses and Collaborative Online International Learning (COIL) notice with a French university (COIL notices aim to establish partnerships for the development of digital and intercultural skills, with the inclusion of international aspects in the curriculum). It was identified that there was virtual unit offer.

This information is in line with what Hudzik (2011) highlights when stating that internationalization is not based on the simple desire of some managers. According to him, for internationalization to happen at home, it is necessary to involve managers, professors, technicians, and students throughout the process.

Virtual mobility is a strategy that enables HEIs to achieve internationalization objectives. In this sense, based on the managers' speeches and the documents analyzed, it was possible to observe that the participating HEIs maintained their internationalization activities even with the restrictions imposed by the pandemic. Even though only HEI B hosted students virtually, both HEIs saw the need and opportunity to develop virtual mobility during the pandemic period.

Next, to characterize the virtual unit offer, the question asked was whether **the HEI offers or intends to offer virtual units** (explaining what virtual units are within this research). The expected and found codes are presented in Table 3. Below is a description of what is expected to be found with each code listed.

Table 3. Expected codes and codes found in HEI A and HEI B – Category 2

Expected codes	Codes found in HEI A	Codes found in HEI B
Type of virtual unit offer (subject, course, lecture, webinar)		Webinars, extension courses, mandatory subjects and optional subjects
Virtual unit instruction language		English, Spanish, French, Italian and Portuguese
Workload (weekly/monthly/semi-annual)		Hours, quarter, semester
Modality (synchronous, asynchronous)		Synchronous, asynchronous, hybrid
Type of certification (validation of credits, registration in academic records, certificate, diploma)		Credit validation, certificate
Target audience (technician, undergraduate, postgraduate)		Undergraduate and postgraduate students
Demanding public (professors, students, managers)	Partner institutions	Partner institution, internationalization department, professors

Source: Elaborated by authors

The *type of virtual unit offer* refers to the offer identification and differentiation, that is, whether it was: extension courses, mini-courses, lectures, webinars, subjects (mandatory or optional), among others. The *language of instruction* checks whether the offer was in the Portuguese language or in a foreign language, identifying which languages. The *duration of the workload* determines whether the offer lasted weekly, monthly, or semi-annually, among other possibilities.

From this perspective, the *virtual unit offer modality* refers to the identification of the activity as synchronous, asynchronous, or hybrid. According to Stallivieri, Snoeijer and Melo (2022), internationalization activities can be performed in person, virtually or in a hybrid manner, and interaction can take place synchronously or asynchronously. Synchronous interaction happens when the professor and students meet at the same time and in the same environment, whether virtual or in person. Asynchronous interaction occurs when the content taught by the professor can be accessed by the student virtually or in person, at a time different from that in which the content was produced. For Stallivieri (2021, p. 23), hybrid

internationalization is defined as “an intentional process of integrating an international, intercultural or global dimension into the objectives, functions and provision of post-secondary education, which takes place both in person and with the support of digital information and communication technologies.”

The *type of certification* aims to identify how the HEI certified the virtual unit, whether through validation of credits, certificate or registration in the academic record (the activity is recorded in the record, but does not generate credits). The code called *target audience* verified whether the offer was made to technical, undergraduate, or postgraduate students. Finally, the *public-demanding code* proposed to investigate which public took the initiative in demanding the virtual unit offer. This type of audience can be: HEI management, the internationalization department, professors, technicians, students from the institution or partner institutions with which there is cooperation.

The HEI A manager reported the difficulty in finding professors for a COIL partnership when they receive this type of offer from other countries, also reporting that he does not perceive the initiative of HEI professors to offer activities such as COIL. According to him, the difficulty in offering is not the language barrier: “*We have highly qualified professionals not only to offer subject in their own language, right? In Portuguese, in this case, but also to offer subjects in other languages, such as Spanish and English.*” The manager also reflected on the offer of optional subjects and curricular subjects, understanding that internationalization at home is not effective through the offer of optional subjects in a foreign language. As a consequence, he believes that the difficulty in offering curricular subjects lies in the professors’ workload, as the offer in a foreign language and Portuguese generates duplication of workload. Offering optional subjects and extension courses would be a more viable option, but unfortunately, according to him, there is no initiative from professors to offer these activities. In this sense, Manager g1’s speech allowed us to realize that the partner HEIs were the public demanding virtual mobility activities.

The HEI B manager reported on the offers that occurred, how they happened and what the demanding public was. The managers of the internationalization department, at the beginning of the pandemic, realized that it was possible and interesting to record content and make it available on the network, as can be seen in the following statement: “[...] *we started to see that the use of webinars [was] a great idea for promoting internationalization at the university.*” Next, we have the manager’s speech, highlighting the HEI’s commitment and involvement with internationalization:

So what did we do? We proposed: the professor [...] made webinars related to topics regarding internationalization. So, for example, double degree, he made a webinar, invited the undergraduate dean, co-tutelage invited the postgraduate dean, to then promote the internationalization process [...].”

Such actions reported by Manager g2 help the HEI achieve some of the objectives listed in its PII. The HEI B establishes objectives that allow the institution to develop, in its students, professors and technicians, an international and intercultural awareness. Internationalization is

desired by the institution, through research, knowledge production, international cooperation and solidarity, strengthening its role of excellence and inclusion. It was possible to observe in his speech that HEI B took advantage of the opportunity brought by the pandemic.

A factor that deserves to be highlighted in the manager's speech is that the material produced was available on the HEI channels, thus allowing better information management, facilitating the department civil servants' work. The concern with the organization and availability of information to students is foreseen in the PDI, as a way of publicizing opportunities and activities related to the internationalization of education.

We receive a lot of emails from students asking "how can I go to study at [...]?" and we say something like this: "Oh, watch our webinar and then send an email again." So it's awesome because people can see it, right? A series of pieces of information that were there also make our work a lot easier, we don't waste time, right? In this demand that would be there.

Regarding the virtual unit offers, Manager g2 also reports that the need to offer activities to students was felt while the legislation with regard to offering regular online classes was updated. A partnership was made with an educational technology company so that students could take extension courses using the platform. The experience was evaluated as very positive and from this, combined with the available budget (which was not used for physical mobility), the idea of creating virtual extension courses emerged, with support from other HEI sectors. For this purpose, according to what can be seen in the manager's speech, it was necessary to issue a notice, as follows:

[...] professors who were interested applied and offered courses in different languages. So we had a course in Italian, a course in French, there was a course [...] that was in French, a course [...] that was in Italian. We had several courses in foreign languages: how to write [...], it was offered in English and that was the first, the first course, right? [Regarding] Mobility, extension that the institution offered last year and it was really cool, it was a success, a lot of people enrolled. The scientific writing course had a lot of enrolled people, it was really cool.

The institution's PDI provides for the offer of subjects in English at undergraduate and postgraduate levels, contributing to the creation of an international and intercultural environment at all campuses, thus promoting internationalization at home. It also proposes the use of audiovisual media for production and dissemination of teaching, research, and extension activities, in addition to the institution internationalization (among other transversal activities). Besides, there was stimulation of extension activities that aim at internationalization by supporting experiences in different cultures and languages.

The virtual units found in the notices on the HEI B's internationalization department website were characterized per type as mandatory subjects, optional subjects, and extension courses. Languages of instruction were English, Spanish, French, Italian, and Portuguese; in relation to duration, courses were offered in hours, and subjects per semester or quarter. Virtual units were offered in synchronous, asynchronous, and hybrid modality. The type of certification found was validation of credits for mandatory or optional subjects, and

certification through a certificate for extension courses. The target audience was undergraduate and postgraduate students from the HEI and partner universities.

The incentive and financial recognition of virtual mobility practices is a factor mentioned by the manager, which corroborates what is found in the literature (O'Dowd, 2021; UNESCO IESALC, 2022), in addition to the importance of the technological structure (O'Dowd, 2018; UNESCO IESALC, 2020). The manager stated that:

*[...] teachers **received a grant** to be able to set up the course, the course is on the virtual platform and can be reused. So the idea is that we will formulate some things from these courses this year and offer them again. So maybe we can get money for more new courses, **that's the advantage of a course, it's somewhere online like the virtual platform** [...]*

The courses were designed as extension courses because of the need for greater regulation regarding the curricular subjects offer, which was initiated by another HEI, which sought a professor from HEI B to offer virtual subjects to students from another country. According to the manager, the experience was positive:

[...] we still don't have any experience with virtual mobility in undergraduate courses, such as incoming and outgoing, we are doing it for the first time, it was the first course we offered and it went really well. We only did it with the [...] course, it worked very well, it worked, the professors understood each other, the students were able to take the subjects, there were things there that were final paper, it was a little complicated to adjust, but in the end it all worked out.

The HEI's PDI describes the internationalization of education, especially at the undergraduate level, as Manager g2 reported, as necessary to contribute to training for the performance of the profession in a context of rapid, constant, and profound changes. The HEI understands the need to create international agreements, such as the one described by Manager g2, to develop global and intercultural skills. Cooperation agreements and curriculum integration experiences, including double degree, are actions provided for in HEI B's PII.

Other virtual mobility opportunities involved sending students abroad. Although it is not the focus of the research, it is possible to visualize the commitment of various sectors of the HEI to internationalization, as foreseen in its PDI.

It is necessary to highlight the factors that contributed and made virtual unit offer difficult, according to the managers' perception. For this, the question asked was: **what are the facilitators and obstacles in offering virtual units and how you evaluate them.** The expected and found codes are presented in Table 4.

Table 4. Expected codes and codes found in HEI A and HEI B – Category 3

Expected codes	Codes found in HEI A	Codes found in HEI B
Legislation		X
Technological structure (hardware and Internet)		X
Institutional positioning (resistance, support)	X	X
Availability of resources (human, financial, infrastructure)	X	X
Stigma as an inferior activity	X	
Digital skills (on the part of professors and students)		X
Difference in time zone		
Mastery of languages	X	

Source: Elaborated by authors

Manager g1 had already mentioned language proficiency, in order to understand that this is not a barrier that makes the offer unfeasible, as the HEI has many civil servants who speak other languages. The language barrier mentioned refers to the difficulty in offering Portuguese courses to attract foreign students.

Although language proficiency has not been identified as a barrier (UNESCO IESALC, 2021), the lack of institutional support can be identified as a difficulty in the development of internationalization activities (O’Dowd, 2018). Manager g1 mentioned the difficulty in providing workload for professors to offer virtual units, which corroborates the literature on clear and intentional institutional positioning for the development of internationalization (De Wit et al., 2015). Although the PDI mentions the importance and has strategic objectives and goals related to internationalization, the findings of this research allow us to conclude that internationalization is not disseminated comprehensively among the HEI’s different audiences (Hudzik, 2011).

As Manager g1 reported, the literature shows that offering optional subjects in a foreign language is not sufficient for the development of internationalization at home (De Wit, 2013; Beelen; Jones, 2015; Barata, 2019; Leask, 2020), but rather one among other activities that can be developed. Basing internationalization at home on the offer of optional subjects maintains unequal access, as it is an activity that mostly attracts students who are already predisposed to internationalization (Barata, 2019).

Manager g1 mentioned the possibility of participating in a support notice, at national level, for the selection of HEIs to offer Portuguese language courses to foreigners. Participation was unfeasible due to the need to provide workload and/or scholarships for the civil servants who would be in charge of the course. The opportunity, offered to 37 HEIs, was attended by few, according to Manager g1:

[...] only six or seven managed to actually offer the course. Because of not having a Portuguese professor with the workload to teach this course, for another demand. So I see that this issue of workload is complicated for the professor who wants to provide subject to the other student, for the international

partner and for the Portuguese professors who need to train the students who come here, virtually or in person, right? This is quite complicated.

HEI A's PDI does not make direct mention of offering foreign language courses or Portuguese courses to foreigners, although one of its strategic initiatives is to increase the HEI visibility (which would be possible by attracting foreign students) and the strategic objective related to internationalization places the HEI as committed to bringing cultures closer together and cooperating in favor of scientific, cultural, economic, and technological progress among people. Although the HEI intends to consolidate internationalization through the policies and practices of the faculty, it is difficult to make professors available to offer Portuguese language courses to foreigners, compromising the achievement of this strategic objective. The manager also reported the financial limitation as a hindrance. According to him, the aforementioned notice enabled the payment of scholarships to hire professors. Despite trying, he was unable to get resources at the HEI to offer the Portuguese course to foreigners. Manager g1 concludes addressing the difficulty: *"So, internationalization is an interesting thing, right? Because everyone says it is important, but when we need to make things real, it's very complicated."*

The strategic objective foreseen in HEI A's PDI presupposes the incorporation of internationalization into the institution's processes in a comprehensive, transversal and articulated manner, consistent with a modern stance supported in the literature, which foresees intentionality (De Wit et al., 2015) and transversality (Hudzik, 2011) for its success. If the HEI makes efforts to achieve this goal, especially by developing and implementing the internationalization policy and designing the processes that involve it, as foreseen in the PDI, it will be closer to achieving its objective.

Regarding the technological structure, digital skills and preparation for interaction on the virtual environment, Manager g2 pointed out as obstacles to offering virtual units, mainly with regard to *"[...] having a good Internet, having a good camera, a good microphone, being able to organize ourselves, working from home..."* There is still the issue of maintaining a routine and focusing on studies when virtual environment. In this sense, he highlights that:

*The ability to maintain focus is greatly reduced on the virtual environment, right? I don't know where I read it, that it's like seven minutes, a normal class is thirty minutes, a face-to-face class, and on a virtual class it's seven [...]. So it's a little time, on virtual environments it's very easy to lose focus. I felt, **in virtual modality you have much greater mental exhaustion and a huge loss of focus.***

Therefore, technology is seen as a hindrance and a facilitator, as people have had to adapt to this new reality. Furthermore, this was the means that gave people who would not be able to physically move the opportunity to have an international experience, virtually. Then, the manager reports the benefits of those who participate in a virtual international experience:

Including this cultural and academic exchange, they were not able to do it before. Because there was no way, they couldn't afford it. So this was also a very positive gain, the Internet was a facilitator in that sense.

The HEI B's PDI lists seven transversal areas, including inclusion and sustainability, in addition to the internationalization already mentioned. Manager g2's speech reflects the construction of the PDI and the transversality of the themes that permeate the HEI's target areas. It is observed that the manager's speech is in line with what is stated in the PDI, as when addressing internationalization there are elements related to teaching, sustainability, and social inclusion. According to the literature, social inclusion, equity, and environmental sustainability are advantages presented when considering virtual mobility as an efficient way of developing the internationalization of education (UNESCO IESALC, 2022). Virtual mobility becomes one among other mobility options within a future-oriented internationalization strategy, committed to inclusion and sustainability (UNESCO IESALC, 2022).

In this sense, Manager g2 reflects on the importance and need for virtual activities to be maintained after the pandemic period:

I think this has to continue being a policy for us to invest in because not all students have this condition, to study abroad, in in-person mobility. I don't know how, virtual unity doesn't have the same impact as in-person mobility. In person you have much more culture, it's only there you can live the the day-to-day life, but it's a way for us to try to alleviate this disparity and also be able to provide conditions for those who do not have these possibilities.

Manager g2, when asked about the **public demanding the initiatives, and whether professors took the initiative and accepted the new modality**, reported that there were those who were motivated by the novelty and took the initiative in proposing virtual units, as well as those who resisted and had difficulty adapting, mainly due to difficulties in relation to technology:

[...] they couldn't use the system, they had difficulty using the virtual platform, they had difficulties in, for example, it happened a lot in lectures we gave and webinars... and it's not just with professors, with lecturers too... people don't know, they don't know how to share screen, they couldn't share documents, the computer would freeze, the sound would come out, there was noise... so people had a difficult time.

It is clear that digital literacy is one of the challenges for the successful implementation of virtual mobility (UNESCO IESALC, 2022). To overcome this challenge, the institution should offer training for the development of digital skills, to learn to interact on a virtual environment and develop intercultural skills, knowing how to act in the face of different cultures within the classroom. In addition to digital literacy, another aspect that reflects on issues such as maintaining students' focus is the balance between formal activities and interaction activities (UNESCO IESALC, 2021). Virtual mobility should not be conceived as a replica of physical mobility. Strategies include balance between synchronous and asynchronous activity, time zone limit of six to seven hours, and inclusion of cultural activities (UNESCO IESALC, 2022).

Thus, it was possible to identify in the manager's speech that bureaucracy, due to legislation, made it difficult to create more opportunities. In the PDI, this perception is observed in one of the objectives related to teaching. The HEI foresees as a strategic initiative

the support and simplification of the academic mobility process, among other activities that would contribute to increasing the visibility of the HEI and its international insertion.

According to the data found in the research, the difficulties encountered by federal HEIs in the state of Santa Catarina were the lack of institutional support, reflected in the low availability of human and financial resources, the stigma of virtual mobility as an inferior activity to physical mobility, the difficulty of students, lecturers and professors regarding technological structure and digital skills, which includes preparation for interaction on a virtual environment. The facilitators highlighted by managers were: the technological structure, institutional support (in the HEI that managed to develop virtual units), the availability of resources, and language skills.

In the last stage of the interview, the questions sought to understand whether **there are mechanisms for evaluating the units offered and how the process can be improved, in the manager's perception**. The expected and found codes are presented in Table 5.

Table 5. Expected codes and codes found in HEI A and HEI B – Category 4

Expected codes	Codes found in HEI A	Codes found in HEI B
Integration into the curriculum		
Balance between synchronous and asynchronous activity		X
Balance between formal and interaction activities		X
Preparation for interaction on a virtual environment		X
Establishment of partnerships	X	X
Support from the internationalization sector	X	X
Virtual unit offer diagnostic mechanisms		
Monitoring mechanisms		X
Assessment mechanisms		X

Source: Elaborated by authors

As HEI A did not offer virtual units, it was an open-ended question so that the manager could comment on the internationalization process. Manager g1 mentioned the importance and his interest in promoting events that disseminate internationalization at the HEI, mainly by awakening professors' consciousness of the importance of their own role in this process:

Listening to what the student wants, the professors too, as I told you, they often don't even know they can propose an action. Sometimes they think they have to wait for the rector's office to propose it. So, I think that an event like this, something that would be periodic, we can clarify these issues and make people feel more confident in making their proposals.

The importance of professors' commitment is widely highlighted in the literature, such as Knight and De Wit (1995), when they mention the need for the involvement of a critical mass of professors and technicians. The professor's role is essential for the success of internationalization, whether virtual or in person.

Still in relation to the obstacles to internationalization in general and what can be improved in the process, this same manager mentioned the difficulty in publicizing opportunities that are offered externally, as the practice and culture at the institution is to publish only internal notices.

If it is an external opportunity, [...] we cannot disclose it. [...] We are trying to change it now as well, but in very small steps because this culture of not disclosing [external opportunities] is already very established. That's a shame, right? Because sometimes wonderful things come from abroad and we can't publicize them, the student doesn't know about it or only a few students know about it. So I think that would be an improvement.

The Manager g1's speech is consistent with the literature, since broad and institutionalized dissemination goes beyond just presenting the opportunities and what the internationalization department or professors are doing (Knight; De Wit, 1995). The commitment of the entire institution to the internationalization process is evident when each civil servant knows the contribution that their work makes to the institution achieve its internationalization goals. However, for these goals to be achieved, they have necessarily to be clear in the institution's PDI and PII. It is necessary for the PDI to outline the role of each individual and each sector, so that everyone understands how their work contributes to the internationalization process and the importance of this reach.

Manager g1 concluded by emphasizing the importance of valuing language teaching and the professors' role, especially that of foreign language professors:

[...] I remember that as a professor, any action I would take that promoted internationalization, it was soon interrupted when there was a problem with the curricular workload. So: a professor who left, a colleague who fell ill, a maternity leave that didn't allow time to hire a replacement... [the professor] interrupts this project and takes over another teacher's classes [...].

And he adds:

They always feel devalued as a foreign language area, today we are still struggling to create a language center and this is basic to internationalization, whether at home, whether traditional and... and things seem not to work, right? Anyway, I think there has to be this conversation and it is necessary to listen to these language professionals, appreciation and that's it, I think that's basically it.

The strategies outlined by Knight and De Wit (1995) and O'Dowd (2021) address the need to establish concrete or symbolic mechanisms to recognize and reward civil servants who engage in internationalization and virtual mobility.

Manager g2 reported the evaluation mechanisms used to monitor offer quality and approval. The department has an internal document with goals and indicators to monitor the evaluation, including: view counting, time online, number of subscribers, comments, number of likes. The units available as an extension course were evaluated using a self-evaluation form at

the end of the course, answered by students, professors, and monitors. With the indicators, the department can evaluate offers:

So, we can assess how the course was, right? In other words, what we have to improve, what we have to change for the next editions. If there was adhesion or not, if there was a lot of people enrolled but few people completed it. So, thank God we had all these indexes, so we have them and this allowed us to have a good idea, right? A good idea about if worked, what worked and what didn't work. How to evolve from there, right?

When asked what could be improved, Manager g2 responded with the following points: improving teaching material, reducing the duration of classes and courses. Manager g2's perception is to offer more courses with shorter duration:

Even if you offer more courses, fifteen courses, more courses, but in small modules, the student can finish it, you know? That module. Because when we offer something [course] very extensive, you see that there is a lot of dropout. Many [students] go in, few go out, right?

The constant evaluation and monitoring is scored by UNESCO IESALC (2021). Among the points addressed by O'Dowd (2021) that can reduce the problem highlighted by Manager g2 is the need to balance synchronous video activities with asynchronous text-based activities, in addition to the balance between formal activities on the proposed content and activities of interaction between students. It is necessary to highlight the importance of preparing professors and students for communication on an intercultural digital environment, selecting topics that promote in-depth interaction, avoiding falling into superficialities (O'Dowd, 2021).

Like Manager g1, Manager g2 also cited communication as an obstacle to be improved, expanding the offer dissemination to the community. One of the reasons that makes communication difficult is the urgency in responding to demands. Knight and De Wit (1995) list the existence of formal communication channels as one of the necessary activities for the process of internationalization of education.

Manager g2 rated the reach of virtual units as positive, as being a multi-campus HEI, there were difficulties in providing activities to all campuses.

We now have this on all campuses, we can access it, we can reach all these students, in all these units. So it was also an advantage in that regard. We even welcomed students, I remembered one more, we also welcomed virtual students virtually. And it was completely different from mobility, from in-person welcoming. Because it had to be super, we had to reduce it, make it much shorter, much faster... again due to the issue of student concentration, keeping them focused. We also managed to do it and it was really cool, it was really interesting, we welcomed them virtually.

At the end of his speech, Manager g2 recalls difficulties faced with virtual mobility, mainly in relation to the closure of borders and in relation to the prejudice that virtual mobility had in relation to in-person mobility:

And at the beginning you saw a distrust, perhaps that's the word, regarding the use of the virtual tool. People have a prejudice that distance learning is those courses that are kind of... kind of poor quality... so it took a while for us to be able to create a culture that this was a reality, it was a good reality, it was a positive reality and people, right? ...again, a construction. And today people started to see DL in a little more, a little more... less prejudiced manner, appreciating DL in a little deeper way, for example.

Corroborating the theory (Stallivieri; Snoeijer; Melo, 2022), Manager g2 understands the virtual initiative as positive, but not as a substitute for physical mobility:

So there were a lot of really cool things that people did, students who went to different places, did really cool things. It is a tool that is very positive, but at the same time as it is very positive, we cannot think that it is the same as in-person (mobility). They are not the same. Because being in person is another dynamic, another behavioral dynamic. I think there's a lot of this behavioral dynamics involved in human beings, but I think it's an extremely important tool and I think it's a tool that won't be interrupted, if it's up to us we intend to maintain these policies.

The documentary analysis allows us to affirm that HEI B is aware of the need to have clear objectives, and updated strategies and action plan. Another action foreseen in the PII is offer of subjects in the English language, promoted by the courses themselves to attract international students and thus promote internationalization at home, promoting an international and intercultural environment.

Based on the data obtained, it is possible to present a proposal for management actions to increase the virtual unit offer. The internationalization of higher education in Brazil is confused with the practice of physical mobility (Knight, 2020; Stallivieri, 2017), which is restricted to a few people because of the high cost. A HEI that aims to be inclusive cannot limit its internationalization strategies to physical mobility (De Wit; Jones, 2022). Even if it were possible to extend this practice to all HEI students, it cannot be ignored that there are those who would not be able to travel due to personal limitations, such as the need to work, care for a family member, or some disability that makes travel and the stay in an unknown country difficult (UNESCO IESALC, 2022). This aspect and the environmental impact of a large mass of students traveling by bus or plane are factors that allow us to affirm that physical mobility is an unsustainable practice from several points of view (economic, social and environmental).

Virtual mobility, therefore, is a practice that has the potential to contribute to internationalization at home. If it is carried out as an isolated practice, disconnected from other actions and, mainly, disconnected from the institution's guiding documents, such as PDI and PII, it will not contribute positively to internationalization at home. It is necessary to develop actions that enable and encourage scholars to interact with people from other cultural and geographic contexts (Nilson, 2000). In order for virtual ingoing mobility to actually contribute to achieving the benefits of internationalization at home, some aspects should be observed, as illustrated in Figure 1.

Figure 1. Management actions to improve the virtual unit offer



Source: Elaborated by authors

The institution managers' commitment and support are essential. Going further, there is an urgent need for clear public policies that make internationalization a state policy and not a government policy, so that the actions carried out have continuity and become less influenced by government or HEI management transitions. One of the limitations of the research was the change of managers designated by the federal government. Of the four HEIs that made up the scope of the research, two of them were managed by *pro-tempore* deans during the period defined for research. In this sense, it was possible to observe that the local managers' actions were compromised by the discontinuity of actions caused by the successive exchange of managers and teams in a short period. The commitment of managers, especially senior management, will give impetus to the internationalization cycle (Knight, 1994), starting with awareness, going through commitment, planning, operationalization, review, and reinforcement of internationalization actions, which includes virtual ingoing mobility.

The development of guiding documents, in which internationalization is a perspective perceived in the actions and functions of the HEI (teaching, research, extension, and management), and the managers' commitment are the basis of other actions. Furthermore, it was observed that the HEI that had internationalization described in its PDI in a transversal manner, the PII with outlined policies and actions, the autonomous internationalization department with a team at its disposal, was the HEI that managed to develop several internationalization actions, including the virtual unit offer. In addition to the international dimension required in the PDI, the PII is a fundamental document for the institution to develop internationalization at home.

The managers' support and commitment, combined with the existence of the PII, are necessary steps for establishing partnerships. Cooperation agreements with other institutions, as well as partnerships for technological support (UNESCO IESALC, 2021), lack pre-established criteria, in accordance with the HEI's objectives regarding internationalization, such as the

establishment of language policy partnerships in countries of interest, for example (De Wit; Wang, 2022).

The existence of an internationalization department equipped with human, financial, and technological resources, with training or the possibility of training its civil servants and the necessary autonomy to propose and implement actions is one of the basic measures for the development of internationalization. Among the actions that the department can implement is the provision of a form to collect information about civil servants who have experience or interest in offering virtual units. The work between the internationalization department, professors and technicians needs to be favored by communication tools, since the internationalization process depends on the joint work of all these groups.

The creation of a language center, which can promote and provide language courses with an international perspective, is an action that contributes to promoting internationalization in general and at home. Furthermore, it helps to strengthen the language professors' role, especially in the context of multi-campus institutions such as universities and Federal Institutions in Brazil.

The success of virtual mobility and internationalization at home includes the involvement of professors and technicians, who should be stimulated through concrete or symbolic actions. Recognizing this work through grants for the development of virtual units or through performance evaluation criteria, which is a requirement for career progression, are actions that can be carried out in public or private institutions. As a possibility for future studies, it is possible to analyze a set of HEIs and verify which ones use criteria related to internationalization and virtual mobility to evaluate their civil servants.

One action worth highlighting is the technical and behavioral training of civil servants who will work on a digital and internationalized environment. Technical training concerns the use of technological tools (equipment, programs, applications and platforms) necessary for virtual interaction. Behavioral training includes intercultural skills, as cultural differences will exist and, if well worked on, gains and benefits are added. If ignored or mismanaged, they can significantly compromise the result of the activity.

Another demand for training relates to interaction on the virtual environment, being aware of the difference from in-person interaction and that there is a way of behaving on the digital space so that interactions and learning are effective. The need for balance in offering synchronous and asynchronous activities and formal activities and activities that promote group interaction (O'Dowd, 2021) are items that cannot go unnoticed in the virtual unit offer, as virtual mobility is not the mere transfer of the physical environment to the virtual one (UNESCO IESALC, 2022).

For such actions to happen, resource planning for internationalization is necessary, including virtual mobility. Virtual mobility generates less costs than in-person mobility, but it is not cost-free, as it requires technological and human resources to be implemented and then to

take place. It is necessary to consider that this cost will generate benefits for a large number of students and not for some who would be able to afford in-person mobility.

4 Conclusion

This research was developed with the objective of analyzing the development of internationalization at home through virtual mobility in federal HEIs in the state of Santa Catarina. When studying the case of two federal HEIs based in the state, which had restrictions on the practice of physical mobility due to the COVID-19 pandemic, it was possible to realize that virtual mobility was one of the practices developed by the HEIs so that internationalization could remain in institutions.

Although only one of the HEIs has adopted virtual ingoing mobility, the analysis of documents and interviews showed that both HEIs maintained internationalization through virtual activities, such as: ingoing mobility, outgoing mobility, international partnerships, training courses, language courses, extension courses, use of social media and welcoming events for exchange students.

The research was carried out based on documentary analysis and the internationalization department managers' perception. However, it is relevant to investigate virtual mobility from the perspective of postgraduate managers, as postgraduate studies and research are essentially internationalized (Knight; De Wit, 1995). The results obtained allow us to affirm that the research can be replicated with other delimitations, such as geographic scope. The research showed that language skills are not considered a barrier, given that many civil servants speak a second language. This finding raises the possibility of investigating language skills within HEIs. To think about offering virtual units, the first step to be taken may be collecting data identifying the languages that civil servants speak to then outline cooperation strategies with countries and institutions that speak that language.

Another interesting finding that requires continuity in the research is the interest of students in virtual mobility, since the temporal scope of this research was precisely the period in which in-person mobility was not possible to take place. New research can be conducted to verify whether the offer, on the part of HEIs, and whether the demand for this offer, on the part of students, remain, due to the effects of the resumption of in-person mobility.

Carrying out this research has a contribution from a social aspect, by pointing out the need for study, discussion and referrals that aim to propose socially responsible alternatives, making the internationalization of education reach students from unfavorable economic contexts, as well as students who cannot travel due to family responsibilities, and also students with disabilities. The debate about the environmental impact of in-person mobility needs to be expanded, measuring this impact when talking about the positive and negative points of in-person mobility and virtual mobility.

The theoretical contribution of this research advances knowledge in the area, as it provides data regarding the virtualization of internationalization, more specifically about the possibility of offering virtual units and, from this, expand and strengthen internationalization at home in institutions.

Finally, it is possible to glimpse the contribution of a practical nature, as the research contributes to university management by listing actions that can be developed by educational institutions to implement and develop the virtual unit offer, making it possible to develop internationalization at home.

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