

Internationalization of European Virtual Universities: A Qualitative Study of the Challenges

Master's thesis for obtaining the academic degree

Master of Administrative Sciences

in the study programme

„Research and Innovation in Higher Education“

(MARIHE)

submitted by

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Krems/Austria, February, 2021.

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Acknowledgements

Writing a thesis while confined because of a world pandemic sounds like a perfect timing. The reality is different. The worries, the uncertainty, and the powerlessness generate a stressful atmosphere. For that reason, I would like to thank to all the people who offered support during the designing and writing of the study.

I thank my supervisor Stefan Oppl and the DUK thesis team, who supported, discussed, and advised every step of the process. The master thesis supervision and classes with the group of professors were an incredible opportunity for learning and consolidating the research work. This allowed me to take diverse pieces of diverse and see how the work of my classmates was also developing.

My classmates also played an important role by discussing, reading, and giving advice on my work. I thank Abbie Loi, Jessica Schüller, Miguel Ángel Bohorquez, and Nathália Rosário that volunteered for giving their feedback and valuable recommendations that shaped my writing process and contributed to have a concrete result.

The willingness of the interviewees to contribute was the basis of this study. Their individual thoughts and experience are the backbone of this work. I also thank to the European Association of Distance Teaching Universities (EADTU) and International Council for Open and Distance Education (ICDE) for their enthusiasm to contribute to the topics discussed in the project.

Finally, I would like to thank to the MaRIHE program and family for the wonderful experience of personal and academic growth.

Abstract

This qualitative research examines internationalization in online higher education. It focuses on the challenges experienced by European virtual universities for internationalization. This segment of higher education institutions has distinctive characteristics and face different challenges to on-campus higher education since they lack physical mobility of students. Most studies in internationalization focus on on-campus education and neglect the experience and potential contributions of distance education to the growing market of online higher education. This study used a thematic analysis approach to interpret the data collected from interviews and primary documents from eleven institutions. The findings showed that strategic cooperation is the main pillar for internationalization in European virtual universities. The rationales for engaging in internationalization are developmental and humanitarian, linked to access, enhancement, and lifelong learning. The most relevant challenges found are related to cooperation with multilateral organizations, innovation in lifelong learning, international recognition, models for strategic management of internationalization, and enhancing options to mobility. Finally, the study presents several recommendations for practitioners and managers in the internationalization of European virtual universities.

Keywords: International program provider mobility, Internationalization of higher education, Online education, Transnational higher education, Virtual universities.

Contents

Abstract.....	4
Figures	7
Abbreviations.....	8
Chapter 1: Introduction	9
Background.....	9
Research Problem.....	11
Purpose of the Study.....	12
Significance of the Study	12
Research Questions	13
Chapter 2: Theoretical Framework and Literature Review.....	15
Definition and Rationales for the IoHE	15
Transnational Education and Virtual Universities	17
Dynamic Systems in IoHE.....	18
Challenges in Transnational Online Higher Education	20
Literature Review: Internationalization in Virtual Universities	21
Chapter 3: Research Methodology	25
Delimitation of the Research Methodology.....	25
Research Worldview	27
Thematic Analysis	28
Data Analysis and Procedures	30
Instruments and Ethical Issues.....	33
Sample	34
Chapter 4: Findings	36
The IoHE in European Virtual Universities.....	36
The Role of IoHE in European Virtual Universities.....	42
Institutional Approaches to IoHE	44
The Challenges of European Virtual Universities in IoHE	47
Chapter 5: Discussion.....	52
IoHE in European Virtual Universities: Inclusive Education and International Cooperation	52
Dynamic Systems in IoHE for Virtual Universities.....	55
IoHE in European Virtual Universities: Challenges in Context.....	57

Chapter 6: Conclusion	60
Retrospective	60
Major Findings	61
Limitations of the Study	63
Recommendations for Practitioners	63
Recommendations for Future Research.....	66
References	68
Annex 1: Interview Protocol	78
Annex 2: Research Participation, Information, and Consent Form	80
Annex 3: Recruitment Script	82
Annex 4: Challenge Map.....	83
Annex 5: Coding Framework.....	85

Figures

Figure	Title	Page
1	Two pillars of internationalization: At home and abroad/cross-border	16
2	A dynamic framework of internationalization of higher education	19
3	Map of concepts treated in the literature	23
4	The research onion: delimitation of the research methodology for this study	27
5	The six steps of thematic analysis	30
6	Flowchart of procedures	33

Abbreviations

COIL	Collaborative online international project
DST	Dynamic systems theory
EADTU	European Association of Distance Teaching Universities
GATS	General Agreement on Trade in Services
ICDE	International Council for Open and Distance Education
ICT	Information and communications technologies
IGO	Intergovernmental organization
IoHE	Internationalization of higher education
IPPM	International program and provider mobility
MOOC	Massive open online course
NGO	Non-governmental organization
OER	Open educational resources
SDG	Sustainable development goals
TNE	Transnational education

Chapter 1: Introduction

This thesis results from a qualitative research that identified the challenges that European virtual universities face for the internationalization of their activities. The major goal is to describe a set of challenges that European higher education institutions are facing to consolidate their internationalization strategies. The results are useful for the institutions to strengthen their internationalization strategies and for enhancing the discussion of internationalization of higher education related to virtual universities.

This introductory chapter summarizes the proposal of the study. First, it presents the context of transnational online higher education. Second, it delimitates the research problem as the challenges that European virtual universities face for strengthening their international activities. Third, it states the purposes of the study. Fourth, it defines the significance of the study as relevant for stakeholders and internationalization units. Finally, the research question and sub-questions present how the problem is addressed.

Altogether, the five subsections of chapter one provide an overview of the topic, the problem, significance, and the aims of the intended study.

Background

Online education is a vast field with various branches and denominations across different countries and contexts. The most used terms are online learning, online education, e-learning, web-based learning, internet-based learning, distance learning, distance education, distributed learning, computer-mediated learning, and computer-assisted learning (Joimvić et al. 2015). This study uses online education as the broader term. Online education could be formal, informal, non-formal, and formal (Eurostat, 2016), being formal education intentional, standardized, institutionalized, and legally recognized. So, online higher education is formal degree education in its online version, as opposed to on-campus education.

According to UNESCO and ICDE (2015), online higher education has the potential of playing an important role in the near future of education. They estimate that the number of higher education students will rise from 99.4 million in 2000 to above 414 million in 2030. This demand will overflow the capacity of existing higher education institutions. In this context, “online, open and flexible education represents a core range of strategies within a variety of contexts (...) to contribute to meeting this growing demand” (UNESCO & ICDE, 2015, p. 1). Online education is an already established field of distance education and, with the COVID-19 pandemic, it showed its powerful role in the resilience strategies for contexts prevented from on-site access.

UNESCO has been working to develop the United Nations sustainable development goal (SDG) 4, *ensure inclusive and equitable quality education and promote lifelong learning opportunities for all*. Towards this goal, UNESCO issued the *Qingdao Declaration (2015): Seize Digital Opportunities, Lead Education Transformation*. This document has policy

recommendations on how to use ICT and discuss the challenges of access, equity, quality, lifelong, and open educational resources (OER) in higher education. So online education was identified as a key player in higher education worldwide.

For Garrett (2018), online education has not fulfilled the hopes of the access, quality, and cost challenges. In his report, *Whatever happened to the promise of online learning? The state of global online higher education*, he states that, in most of the countries, online education remains marginal, tied to distance education, or has picked and then declined. Also, at an international level, the numbers of enrolled students are declining. What the author highlights as a promising field is blended education, since it allows the flexibility of online education plus the experience of on-campus education.

In line with Garret (2018), Protopsaltis and Baum (2019), in their report to the U.S. Department of Education, present similar views. They also conclude that "online education has failed to reduce costs and improve outcomes for students" (Protopsaltis & Baum, 2019, p. 1). This, despite online education, is one of the fastest growing segments of higher education. Nevertheless, Hill (2019) points out that this report uses data older than 6 years; it does not consider the different populations they serve; it ignores the recent changes that show a variety of change in prices; and it neglects the trend between 2012 and 2017, that shows the closing gaps in students' outcomes in the U.S. for online and on-campus education.

Online higher education, nowadays, is dominated by open universities (Gašević et al. 2015). Open universities are institutions offering distance education with an open access and admission policy. They consolidated in the 1960s and "changed notions as to who should and could benefit from a university education and the approaches to teaching and learning that would facilitate such access" (Paul & Tait, 2019, p. 1). For Paul and Tait (2019), open universities are characterized for their flexibility for access, capacity for large-scale provision, support to part-time and lifelong learners, and commitment to technology enhanced learning.

Parallel to the consolidation of open universities, internet use expanded after the 1990s. According to Tiffin and Rajasingham (2003), the internet brought the idea of virtual universities, institutions "based on the internet that could be available to anyone anywhere" (p. 13). The authors posit that open universities moved from the postal service to the internet, strengthening their actions as virtual universities and preserving the distance education experience. So, virtual university is a concept grouping different institutions offering online higher education.

Online education opens the possibility for operations worldwide. The World Trade Organization (WTO) (1998), in the General Agreement on Trade in Services (GATS), included online education to facilitate international operations. The GATS defined transnational online education as cross-border supply: the provider is in one country, the consumer in another, and the service travels (WTO, 1998). This segment includes distance education, online education institutions, corporate training through ICT, and educational software.

For Knight and Liu (2019) transnational online education is composed of open universities, MOOCs, and pure full online or distance education. They highlight the need of developing common frameworks among countries; international policies, regulations, and data collection; clear frameworks for partnerships; and international quality assurance frameworks. Since it is a field of higher education still in consolidation, the existing frameworks are oriented towards on-campus education. Knight and McNamara (2017) highlight this is relevant because online education is helping to meet the growing demand of higher education by widening access.

This background on online higher education rises 5 four issues. First, the significant role that online higher education can play to enhance access, equity, quality, and lifelong learning for different countries (UNESCO, 2015; UNESCO & ICDE, 2015). Second, the perception that online higher education has not fulfilled the expectations set in the early 2000s and remains marginal (Garret, 2018; Protopsaltis & Baum, 2019). Third, the particularities of virtual universities and its borderless field of action (Gašević et al. 2015; Tiffin & Rajasingham, 2003). Finally, the gaps of knowledge in frameworks, policies, data, and quality assurance in international online higher education (Knight & Liu, 2019, Knight & McNamara, 2017). So the consolidation of online higher education at an international level faces diverse challenges that need to be addressed in the next years.

Research Problem

The research problem addressed in this study is the challenges that European virtual universities face for strengthening their international activities and fulfil the vision of enhancing access, respond to the growing demand, and seize the ICT developments in higher education. As mentioned, despite the growth of transnational online higher education, there are deficiencies in the data and international mismatch of the terms (Knight & Liu, 2019). So, nowadays, it is difficult to diagnose what are the strategic points for strengthening the international offer of online education.

Transnational online higher education is a growing delivery mode of education because of the growing demand in higher education, the increasing need of lifelong learning, and the opportunities that ICT provide for expanding the educational offer internationally (Protopsaltis & Baum, 2019; UNESCO, 2015). UNESCO and ICDE (2015) forecast that online, open, and flexible education will play a significant role in the near future for supplying the international growing demand of higher education. In this context, it is key to know the challenges the virtual universities find as crucial aspects to work on for strengthening their international operations.

In the current studies on internationalization of higher education, virtual universities and online higher education are almost invisible (Knight & Liu, 2019). This segment of education, different to on-campus education, has specific needs and challenges for strengthening their activities because of their online and distance educational offer. Also, because of the growing developments of ICT, there is a rise in new international ways to

approach online education: educational platforms and microcredentials. This can pose more challenges in the global arena for consolidating and extending their educational activities.

This study focuses on Europe because of the more homogenous continental approach to online higher education. Most of the European countries have at least one open or virtual university; most of them are public institutions; they are associated in the same networks (EADTU and ICDE); they are part of the European Higher Education Area; and they are already established institutions. This differs from contexts as Africa, the Americas, or Asia, where the institutions are less homogeneous and have different regulations.

Purpose of the Study

The purpose of this qualitative study is to identify the inter-institutional challenges in internationalization of online higher education for virtual universities in Europe. The study defines virtual universities as higher education institutions offering online higher education internationally (Tiffin & Rajasingham, 2003). Internationalization of higher education is defined as the process of integrating international dimensions in the purpose, functions, and delivery of higher education (de Wit et al., 2015). And challenge is defined as what requires to be done to reach specific goals (Arthur et al. 2012).

The study also intends to characterize the institutional approaches of European virtual universities to internationalization because the internationalization in online higher education differs from on-campus education. Virtual universities do not offer physical mobility, their public does not attend a campus, and, in most of the cases, they are teaching focused institutions. There is also a lack of frameworks and research to understand internationalization of virtual universities and distance education. So this research addresses the institutional characteristics, purposes, activities, and outcomes of European virtual universities to engage in internationalization.

Further than the list of challenges, the study finds the shared vision behind each challenge. Diverse institutions have diverse visions on what they want to achieve and the role they want to play. So the research collects these visions to offer an inter-institutional perspective of where institutions are heading to. This way, the study offers a broad perspective of the actions and visions in internationalization of European virtual universities.

Finally, the study aims to offer a practical view of the internationalization of virtual universities. The characterization and the challenges give stakeholders and staff involved in internationalization activities wide ideas of the topics they need to address. The results can be interpreted as a panorama of the challenges for internationalization of online education providers from Europe. It can also help online higher education providers, to compare their institutional strategy with the challenges and recommendations provided in this study.

Significance of the Study

The results of this study are significant for European virtual universities, their internationalization units, and the university management. They are relevant for enhancing

the existing literature on transnational online education. And they further develop the discussion on international educational provider mobility through online means.

First, the results are significant for European virtual universities because they characterize the internationalization purposes and aims of virtual European institutions. It explores the perceptions on the challenges that the intuitions are facing for internationalization by characterizing of those challenges with the corresponding vision they are aiming. Finally, it offers recommendations for the institutions, based on the shared visions of different virtual universities. So, the audience for this study is administrative and academic staff involved in internationalization activities.

Second, the study contributes to enhance the existing literature by providing research at an institutional level in Europe. Existing literature on the field approach transnational online higher education from a general perspective and, in a few cases, there is a geographical distinction. The study proposes that the challenges of the European virtual universities may differ from the American, Asian, or virtual universities in other parts of the world. This is because European virtual universities share the European Higher Education Area, are harmonized under the Bologna Process, are public in most of the cases, and they cooperate under the same umbrella organizations (EADTU and ICDE). Also, those challenges could vary according to the level of analysis: general, national, institutional, or programmatic.

Third, the study also contributes to the discussion in transnational online provider mobility as a branch of transnational education. Transnational online provider mobility is an under-researched field that lacks international data, and international quality and recognition frameworks (Knight & McNamara, 2017). At the same time, online higher education, where virtual universities are key players, is a growing field (Research and Markets, 2019). So, this study proposes to enhance the discussion in online providers' mobility in transnational online higher education, which is an emerging and growing field.

Research Questions

Given the key role that European virtual universities could play in a near future for helping to enhance access to higher education; also, because of the scarce studies in internationalization of higher education addressing virtual institutions; the primary research question is:

- What are the challenges that European virtual universities face for the internationalization of online higher education?

This question implies identifying a sample of European virtual universities; that these intuitions provide online higher education as the main offer; and that they have international operations with online higher education.

This research question examines the challenges European virtual universities are addressing to strengthen their internationalization activities. This is relevant due to the vision UNESCO and ICDE (2015) have about the key role of online higher education in enhancing

access. Also, in the post-pandemic scenario, online higher education could play a growing and meaningful role in reskilling, upskilling, and deep skilling the population worldwide.

The globalization of economies and the growing relevance of international education allow European universities to contemplate expanding their actions. Internationalization of higher education is a phenomenon consolidated in the 1980s and 1990s (De Wit & Merckx, 2012). It offers multiple possibilities for universities to develop their human resources and students, generate income, build strategic alliances, and produce knowledge with international relevance (Knight, 2012). So, virtual universities could have multiple challenges to continue consolidating their role in international contexts.

The primary research question is desegregated into three sub-questions that capture the profile of the institutional internationalization process, the challenges and the recommendations. The three sub-questions are:

- What is internationalization and its role for European virtual universities?
- What is the institutional approach to internationalization?
- What is the desirable future of the key challenges in internationalization for European virtual universities?

The three sub-questions represent an institutional level, but they are still open to consider the different approaches virtual universities may have. The first sub-question contributes a characterization of internationalization in European virtual universities. The second contributes the institutional approaches to internationalization. The third explores shared visions of the challenges European virtual universities face.

As a summary of the chapter one, it introduced the background, the research problem, the objectives, the rationales, and the research question of the study. It defines the research topic and outlines the general approach to the research problem. The next chapter deepens in the theoretical approach.

Chapter 2: Theoretical Framework and Literature Review

Chapter two structures the theoretical framework and the literature review in five sections. First, it introduces the background of internationalization of higher education (IoHE) and describes the rationales for institutions to engage in IoHE. Second, it presents the concept of virtual international providers' mobility. Third, it introduces the dynamic systems theory applied to IoHE.

The fourth section delimitates the concept of challenge in IoHE in previous research. The fifth section presents a systematic approach to the literature review by using a literature map. These two sections present a literature review perspective.

As a whole, chapter two defines the theoretical concepts, establishes theoretical frameworks useful for the analysis section, and wraps with a panorama of previous studies and gaps in the literature.

Definition and Rationales for the IoHE

Knight (1994) introduced one of the oldest, most accepted, and comprehensive definitions for IoHE, according to de Wit and Merckx (2012). Knight (1994) posited that “internationalization of higher education is the process of integrating an international dimension into the teaching / learning, research and service functions of a university or college” (p. 3). This definition highlights the organizational component of the term process. It implies a cross-sectional component to the missions of teaching and learning, research, and service.

The initial definition has changed and one of the latest updates is adopted by the European Parliament's Committee on Culture and Education in 2015. This definition proposed by de Wit et al. (2015) states that IoHE is:

The intentional process of integrating an international, intercultural or global dimension into the purpose, functions and delivery of post-secondary education, in order to enhance the quality of education and research for all students and staff, and to make a meaningful contribution to society. (p. 29)

This definition involves that IoHE is an intentional process planned by the institution. It is a cross-sectional component to the purposes, functions, and delivery of higher education. It is intended for the actors engaged in higher education: researchers, professors, staff, and students. Its educational aim is to improve the quality of higher education. Its central purpose is to contribute meaningfully to societies.

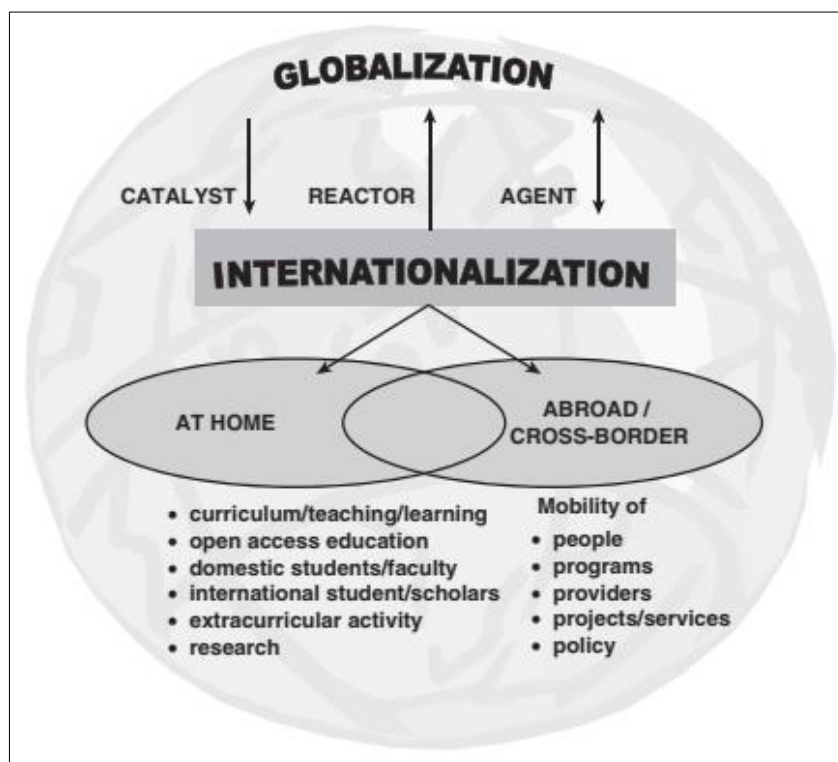
According to Knight and de Wit (1997), IoHE is a response to globalization. They characterize globalization as the flow of elements such as technology, economy, knowledge, people, values, ideas, across borders (Knight & de Wit, 1997), that consolidated after World War II. The world trends in internationalization have acted as a catalyst that promotes or

generates IoHE as a reaction (Knight, 2010). Both factors, globalization and IoHE, act as agents for change and they modify each other.

Defining IoHE as a process implies it plays a strategic role in the planning of an institution (de Wit, 2001). For identifying the dimensions and elements of IoHE, Knight (2010) proposed to understand it as based on two pillars, as illustrated in Figure 1: at home and abroad/cross-border. The internationalization at home pillar comprehends the internationalization of the curricula; the extracurricular activities; the teaching/learning, research, and extension missions; the composition of the academic community in terms of national/international; and the production and use of open access material. The second pillar, abroad/cross-border internationalization, comprehends the mobility of people, programs, providers, projects, services, and policies.

Figure 1

Two pillars of internationalization: At home and abroad/cross-border.



Source: From “Concepts, rationales, and interpretive frameworks in the internationalization of higher education” by Knight, J., 2012, In Deardorff, D., de Wit, H., & Heyl, J. The Sage handbook of international higher education. p. 34. (<http://dx.doi.org/10.4135/9781452218397.n2>), Copyright 2012 by Sage.

The two pillars model is a higher level perspective that is challenged at practical levels. For example, the European Commission (2013) established three pillars for IoHE: international student and staff mobility; internationalization at home and digital learning; and strategic cooperation, partnerships and capacity building. For 2015, Hudzik used these three

pillars to frame his concept of comprehensive internationalization, defined as “a commitment, confirmed through action, to infuse international and comparative perspectives throughout the teaching, research and service missions of higher education” (Hudzik, 2011, p. 6).

At an institutional level, Gao (2019) proposes to divide IoHE in six dimension. The six dimensions ease to develop indicators according in the intuitions. The dimensions are curriculum, engagement, faculty, governance, research, and students. These dimensions are not fixed and depend on how each institution organize internationalization and embed internationalization.

Far from being a passive response to globalization, IoHE responds to a general and institutional framework of rationales (Knight, 2012; Knight & de Wit, 1995). From a general level, Knight and de Wit (1995) identified four rationales. First, the political rationale responds to the expansion of the countries and issues of national security, stability, peace, among other motives. The second, the economic rationale, relates to the development of qualified human resources in a country and the attraction of international revenues. The third rationale, the socio-cultural one, represents the need to understand foreign languages, other cultures, and the diversity that globalization brings. Finally, the academic rationale stands for the need of achieving international standards in teaching/learning, research, and extension to enhance the quality and profile of higher education.

These political, economic, socio-cultural, and academic rationales are complemented with a fifth one: the humanitarian rationale (Ergin et al., 2019; Streitwieser et al. 2019). By studying the refugee crisis in Europe and the need of integration of migrants to the local society, Streitwieser et al. (2019) advocate for including the humanitarian rationale. It recognizes higher education as a public good on a personal, national, and global level that contributes to mitigate the crisis generated by forced migration (Ergin et al., 2019). These actions are developed at an international scale.

Transnational Education and Virtual Universities

This study takes virtual universities as the actors, online higher education as the delivery format, and IoHE as the general practice that allows virtual universities to expand their offer. This section defines the transnational education (TNE), international program and provider mobility (IPPM), and virtual universities.

In framework of IoHE, virtual universities are under the cross-border education pillar. Knight (2015) posits that cross-border education is the term used by UNESCO and OECD, but TNE is more frequent and adequate. According to Knight (2015), TNE “tries to distinguish itself from international education which focuses more on the movement of students” (p. 36). It refers to the “mobility of an education program or higher education institution (HEI)/provider between countries” (Knight, 2015, p. 36). Under this category, virtual universities are offering transnational online higher education. So, IoHE is the highest level term, TNE, the broader category, and transnational online higher education mobility is the specific classification for virtual universities.

Online TNE involves programs and providers moving through ICT to where the students are located. Knight and Liu (2019) defined this segment of TNE as international program and provider mobility (IPPM). It includes online higher education institutions, MOOCs providers, online degree programs, and digital platforms with educational offers and it is aligned with the classification of the GATS. The defining characteristic of IPPM is the dispersion of terms. It consists of open universities, web-based learning, e-learning, internet-based learning, online learning, distance learning, distance education, computer-mediated learning, among others (Joimvić et al., 2015). This confusion is addressed in the study by using virtual university, since the purpose of the research is addressing IoHE from an institutional perspective.

Knight (2012) defined virtual university as a provider of higher education “that delivers credit courses and degree programs to students in different countries through distance education using predominantly the Internet technology mode, generally without face-to-face support services for students” (p. 10). The idea of universities as fully online higher education institutions, available to anyone anywhere, and offering distance education appeared with the popularization of the internet (Tiffin & Rajasingham, 1995). The concept of virtual university reflects the optimism of the 90s about the possibilities of connecting education at a global scale with technology, artificial intelligence, universal access, and student centered methodologies.

Taylor (2001) argues that the idea of a virtual university comes from the long tradition of distance education. In the history of distance education, Taylor (2001) identified five models. First, the correspondence model, based on printed material. Second, the multimedia model that added audio and videotapes. Third, the tele-learning model that included audio/video-teleconferencing and broadcasting through TV or Radio. Fourth, the flexible learning model that migrated to interactive multimedia programs and internet mediated communication. Finally, the fifth, the intelligent-flexible learning model, introduced ICTs mediated communication and offered access to the campus services. Virtual universities come from the development of distance education that allows the institutions to reach students internationally and respond to an intelligent-flexible learning model.

The panorama of virtual universities has consolidated after the 2000s. The field of online higher education, according to Harasim (2001), has seen a rapid growth that brought the development of corporate universities and the consolidation of an extremely competitive market. Virtual universities groups online institutes, open universities, the virtual section of on-campus universities, and networks of universities that consolidate their offer under one name.

Dynamic Systems in IoHE

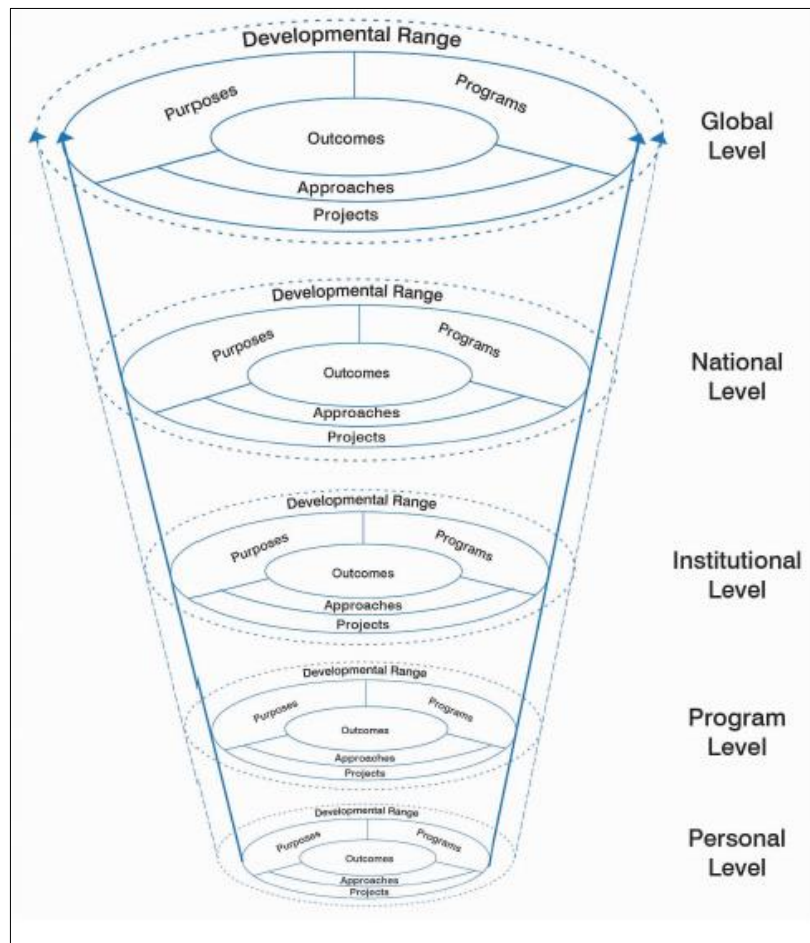
The mentioned concepts IoHE are external high-level explanations of the phenomenon. It is to say, it identifies the mobile elements (abroad pillar) and the dimension in which internationalization can play a role for a higher education institution (at home pillar). There is

the need to understand IoHE from the institutional perspective to connect it with the practice. Zhou (2016) adapted dynamic systems theory (DST) to IoHE. This perspective understands organizations as a collection of interrelated systems that interact internally and externally and are constantly changing (Tucker et al. 2005). DST emphasizes that systems have an initial changing state, and results from the history of the system. Once the system reaches stability by coordinating the diverse elements, it is called parameter state (Zhou, 2016). These two elements offer a cross-sectional or longitudinal possibility of understanding a system.

IoHE is a dynamic system composed of attached subsystems, or single operating units of elements, that work coordinated in the broader systems of IoHE (Zhou, 2016). The model proposed by Zhou (2016) is organized by five levels, each one containing a subsystem. From a top-down perspective, the global level is the international trends, followed by the national policies, the institutional plans, the programmatic implementation, and the individual activities. It works from a bottom-up perspective in which the needs of individuals determine the programs' priorities in internationalization, then the institutional, national and global priorities. Figure 2 illustrates IoHE as a dynamic system organized in five levels.

Figure 2

A dynamic framework of internationalization of higher education.



Source: From “A Dynamic Systems Approach to Internationalization of Higher Education” by Zhou, J., *International Education and Leadership*, 6(1). p. 4, (<https://files.eric.ed.gov/fulltext/EJ1135214.pdf>), CC BY 4.0 2016 by Taylor & Francis.

For each subsystem, there is a developmental range which is the reflection of the collective behavior of the system and responds to the agency of the IoHE (Zhou, 2016). Each developmental range responds to four questions: (1) Why the subsystem wants IoHE: purposes. (2) Where does the subsystem need IoHE: programs. (3) How is IoHE intended and achieved: approaches and projects. (4) And what institution expect and get from IoHE: outcomes. This framework is useful to characterize and assess the purposes, programs, approaches, and outcomes of the levels of IoHE.

From an institutional perspective, DST is a suitable framework to understand how IoHE works. It allows determining the level of analysis and the elements to analyze. For this study, it allowed defining the institutional level of analysis: virtual universities. The elements that need to be identified to understand the dynamics: purposes, programs, approaches, and outcomes. Since the study involved five institutions, it implies an inter-institutional perspective. These are not the global trends. It describes the institutional level. For describing global trends, the sample must be enhanced and include institutions from different regions.

Challenges in Transnational Online Higher Education

The term challenge, in online higher education, is a changing sand since there is not an explicit theoretical framework for constructing such conclusions. A common characteristic in the reviewed literature for addressing challenges is the presentation of a list. These lists come from coding previous literature. May (2018) directly asked practitioners in the field about the challenges as a method to construct such a list. In a similar way, Upadhya (2011) interviewed key stakeholders about the challenges and proposed solutions for the Private International University in Thailand.

There is not a definition of challenge for higher education. Arthur et al. (2012) describes a challenge as “an understanding of what needs to be done to achieve goals and the gap between current state and a future desired state” (p. 6). This is a definition applied to the Olympic competences. From a design thinking perspective, Basadur and Goldsby (2016) describe challenge as an obstacle for solving a social need which creates the opportunity for innovative solutions. So, challenges are obstacles that could be transformed into opportunities that need to be addressed to arrive at a desired future state.

Challenges could be addressed, as mentioned, through literature reviews and by interviewing. Basadur and Goldsby (2016) introduce the challenge map as a tool to elaborate on the problems, articulate the key challenges, and present a panorama for strategic decision-making. Demos Helsinki (2018) proposed to find three key aspects for a challenge: the problem, the challenge, and the vision (Annex 4). The problem is the difficulty that prevents a desirable state from happening. The challenge is the issues to be addressed. And the vision is

the desirable state. So, identifying these three components will produce a clearer idea about the possibilities that a challenge map offers.

In internationalization applied to virtual universities, there is a similar study by Carvalho (2014), “Challenges and Opportunities for Virtual Universities in the 21st Century”. This study does a document review from an international perspective. Carvalho (2014) highlighted as challenges the students’ familiarization with ICT; the diversity of profiles of the students; the adaptation of teaching techniques to ICT; the need of active learning; and the development of online collaboration and group experience. Carvalho’s study bases its conclusions on the teaching and learning dimensions. This study addresses challenges for IoHE in European virtual universities at an institutional level.

Previous literature on transnational online education identifies four major challenges. First, the challenge of access for students coming from disadvantaged backgrounds, refugees and migrants (Streitwieser et al., 2019). This challenge includes problems related to infrastructure, quality, synchronous and asynchronous methods (Palvia et al., 2018). Second, the need of developing flexible solutions for the lifelong learning demand (Barker, 2020; Orr et al. 2018). Third, institutional challenges related to efficiency and sustainability. Fourth, the growing competition in online higher education (Siegle, 2016; Stone, 2019; Tayar, 2013). These challenges represent the global and the institutional perspective in virtual universities.

Literature Review: Internationalization in Virtual Universities

For conducting a literature review, the literature map is a tool introduced by Creswell (2015), that stands for a conceptual visual approach. It allows summarizing the topics, evidencing relations, and finding current gaps. When the literature is to disperse, it allows consolidating a compact view of the involved concepts or topics related to the central theme.

Knight and Liu (2019) conducted a systematic literature review on IPPM that describes the research in the field. They discuss the dispersion in the terms to characterize the modes of IPPM, themes, types of research, and geographical orientation. The findings show that research on international branch campuses is 35% of the literature, on joint partnerships is 15% and joint universities are 5%. International distance education (where they classify virtual universities) is not a representative theme in the field.

For approaching this literature review there was a delimitation of the search. The keywords related to the research question were virtual universities (online education, e-learning, distance education), internationalization, and challenges. The span of time was defined as 2010-2020. The databases used were Scopus, Web of Science, and ProQuest. The first two databases are the most comprehensive, and the third one is focused on education. The typology of documents consulted were articles, book chapters, and thesis. And the inclusion criteria were title, keywords, and abstracts. The resulting 44 documents were classified in a matrix using inductive and deductive coding. The categories were: year, country, approach (quantitative or qualitative), method, level of analysis, aspect of internationalization (mobility, curriculum, program and providers’ mobility, etc.), central topic, and subtopics.

The results of the quantitative perspective were classified according to their recurrence rate. Most of the publications are concentrated in the years 2018 (10), 2019 (9), 2020 (7), and 2016 (4). They were published in the USA (12), Australia (6) and Russia-United Kingdom (3). The most used method is qualitative (40)—17 case studies (excluding surveys), 9 literature reviews, and 2 ethnographies. There were three quantitative studies—surveys and correlational studies. And there was only one mixed methods study. So the publications on internationalization of online higher education have intensified in the recent years, are concentrated in Anglophone countries, and use qualitative approaches.

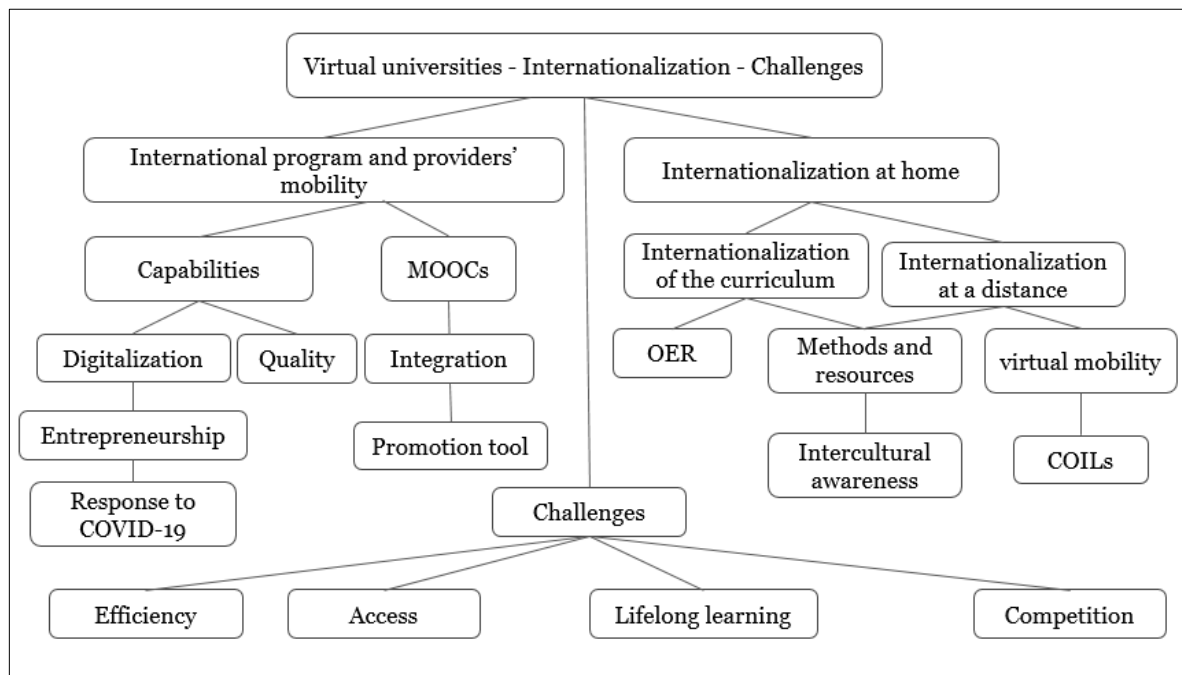
According to the level of analysis, there is a perfect opposition between a global-theoretical level (13) and a program level (13). The institutional level of analysis (8), the country level (4), and the regional level (3) represent lower numbers. In the elements of internationalization, online program-providers' mobility (10) and online students' mobility (10) are the dominant. It is followed by internationalization of the curriculum (8) and diverse topics. These results show the concentration of research at a global and program level of the IPPM.

The dominant topics, according to how they are mentioned in the studies, are classified in 6 big topics. First, internationalization at a distance (12): strategies of internationalization at home without the need of mobility. Second, the development and assessment of e-learning capabilities (8): resources and opportunities for improvement. Third, the challenges of online education as a general field (6). Fourth, the research on MOOCs (4). Fifth, the transnational online curriculum collaboration (3) and collaborative online international earning (COILs) (2). Finally, the discussion of teaching methodologies for online education (2). The topics could be classified into three categories: IPPM, Internationalization at home, and general challenges. General challenges were already addressed in the previous section.

Figure 3 is the literature map, which collects, classifies, and relates the concepts treated in the consulted documents.

Figure 3

Map of concepts treated in the literature.



Note: this mental map uses elements of the theoretical framework to classify the terms that are scattered in different documents.

The first category is IPPM. On one side, the discussion on the construction of capabilities for online education. It relates to the effectiveness of this education delivery (Santally et al., 2020); the knowledge management systems (Altinay et al., 2019); and the establishment of partnerships for strengthening the academic profession for professors in online environments (Van den Berg et al., 2016). This raises the worries about implementing immersive, augmented, mixed, and virtual reality technology in online classes (May, 2020; Rivero López et al., 2014). The responses to COVID-19 with universities switching to online mode (Heyang & Martin, 2020). Also, this category includes the strengthening of entrepreneurial online educational activities (Siegle, 2016; Zashchitina et al., 2018) and the attraction of international students (Skvorcovs et al., 2018).

MOOCs, despite being a different discussion, are intertwined to online higher education. There is the need of engaging and integrating the MOOCs to formal education (Baker et al., 2018). Also, it is important the use of MOOCs to gain online presence and popularity (Zakharova, 2019). One shared concern between MOOCs and online higher education is the quality to improve students' experience and retention (Ossiannilsson et al., 2015) and the concerns about assessment in online environments (Baker et al., 2018).

The second category is internationalization at home. The discussion is on internationalization of the curriculum. There is a need of embedding and connecting the curriculum to international dimensions (Valdes Montecinos, 2019) and through collaborative

online international learning (COIL) (Kung, 2017). This is achieved through international curriculum, co-design, and collaboration (Devonshire & Siddall, 2011; Shahnawaz, 2013). Also, the creation and distribution of open educational resources (OER) is a recurrent topic (Fulgencio, 2018; Ossiannilsson et al., 2015). Furthermore, multiculturalism (named as cross-culturalism, inter-culturalism, or trans-culturalism, too) is an extensive debate. There is the concern of developing group strategies for participants to share and engage in international virtual environments (Kumi-Yeboah, 2018; Sadykova & Meskill, 2019).

Finally, internationalization at a distance is considered as an independent-emerging category of internationalization (Mittelmeier et al., 2020). It takes the form of access to transnational online courses with credits recognition. It is also denominated as virtual mobility (Andone, 2019; Buchem et al. 2018; Rajagopal et al., 2020). It could take the format of COIL projects that involve students from the two institutions in online activities (Howard et al., 2017; King de Ramirez, 2019; Kumi-Yeboah, 2018). This collaboration among students should support second language learning, global citizenship awareness, and to enhance student experiences.

There is scarce literature focused on internationalization of virtual universities or international provider mobility at an institutional level (Knight & Liu, 2019). Most of the research concentrates on general capabilities for going online, but it is limited on the organizational aspects of virtual universities. There is a lack of research on international collaboration and mobility among virtual and on-campus institutions. And on frameworks for international collaboration among virtual and on-campus institutions (Bruhn, 2017). The literature approaches the challenges of virtual universities as a broad field, there are no approaches from the institutional level. Challenges for online education, for online enrolments, for intercultural learning (Carvalho, 2014; Stone, 2019; Tayar, 2013). This study takes an institutional perspective that allows to raise issues that institutions could discuss in their internationalization plans.

As a summary of the chapter two, it has addressed the theoretical definitions, framework, and the literature review. First, the definitions and rationales for IoHE introduced the general concepts that frame the study. Second, the IPPM specified the field and concepts where virtual universities are immersed, as a branch of TNE. Third, dynamic systems in internationalization presented a framework of analysis for internationalization from an institutional perspective. Then, the discussion on challenges and virtual universities addressed the concept of challenge applied to this study. Finally, the literature review presented the research topics and gaps in internationalization of online education. These concepts and theories contribute to classify the actions in IoHE, identify the institutional dimension in which the challenges are located, and develop discussion section, in which the findings are contrasted with the existing theory and literature.

Chapter 3: Research Methodology

Chapter three presents the qualitative research methodology used to answer the research question: what are the challenges for the internationalization of European virtual universities. The first three sections delimitate the research methodology from a wide perspective: The research methodology (strategy, time horizon, techniques), pragmatism as the selected worldview, and thematic analysis as a suitable strategy to answer the research question.

The next three sections of the chapter describe the data collection and analysis framework from a narrow perspective. It describes the data analysis techniques, the reliability and validity measures, and the overall procedures. Next, it explains interviews and documents collection as the instruments for data collection. Finally, it presents the selection and delimitation of the sample.

Chapter three presents a wide research methodology delimitation and a narrow procedures description. This allows understanding the operative tasks for data collection and analysis, as the worldview principles to which these procedures respond.

Delimitation of the Research Methodology

The research methodology of a study, as defined by Leedy and Ormrod (2001), is the “general approach the researcher takes in carrying out the research project” (p. 26). This general approach guides the choices of the tools and techniques for collecting and analyzing the data. It responds to the nature, rationales, and conception of knowledge implied in the research. The research methodology works as a group of layers, according to Saunders et al. (2019). It is important to start these delimitations from the external layers because they have implications related to the assumption on how knowledge is developed, and they guide the actions on the other levels (Creswell, 2013).

Since the research question of this study asks for the perspectives of the problem of internationalization for virtual universities in Europe, it suits the purpose of qualitative research. Qualitative research is used because of the need to explain a central phenomenon, to explain the context, to describe processes, and to understand people’s perspectives on a problem Creswell (2013). A qualitative method is a model of research occurring in natural settings that allows developing analysis based on the involvement with experiences and from the participants’ viewpoint (Creswell, 1994). The results include “the voices of participants, the reflexivity of the researcher, a complex description and interpretation of the problem, and its contribution to the literature or a call for change” (Creswell, 2013, p. 44). So, this method approaches social phenomena to set up thematic patterns that respond to the research question.

Qualitative methods, according to Saunders et al. (2019), could use abductive approaches to the development of knowledge. An abductive approach implies “collecting data

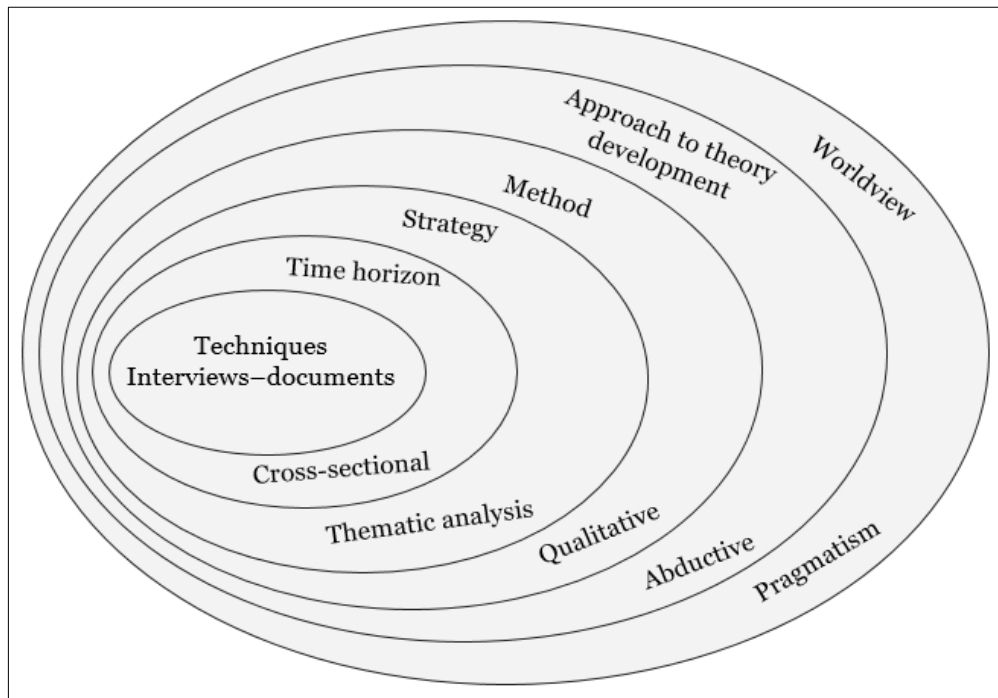
to explore a phenomenon, identify themes and explain patterns, to generate a new or modify an existing theory” (Saunders et al. 2019, p. 153). This approach creates an interaction between the specific, the data, and the general, the theory. Also, it supports the creation or modification of theories. According to Saunders et al. (2019), the abductive approach is useful for research in business and management since it allows a flexible interaction with theory. It is not to apply a theory; it is not to develop a theory. It implies the dialog between theory and data.

As mentioned, this study uses a qualitative method to solve the research question, aiming to explore the experts’ and practitioners’ points of view on the research question. For doing so, data was collected through semi-structured interviews, complemented with the information of the websites, and analyzed through thematic analysis, which is introduced in the third session of this chapter, as the major strategy. This strategy allows identifying patterns in the data of the documents. It is a method applied for qualitative data analysis.

For picturing the complete research design decisions, Saunders et al. (2019) proposed the research onion as the metaphor for understanding the levels of decisions made in a research methodology. The research onion is a tool to construct an effective research methodology by connecting the layers of the methodological decisions. From outside to inside, the 6 layers of the onion proposed by Saunders et al. (2019) are philosophy or worldview, approach to theory development, method, strategy, time horizon, and techniques and procedures. Figure 4 depicts the research methodology of this study by applying the research onion.

Figure 4

The research onion: delimitation of the research methodology for this study.



Note: Adapted by the author based on “Understanding research philosophy and approaches to theory development”, by Saunders, M., Lewis, P., & Thornhill, A., p. 130, Copyright 2019 by Pearson.

From outside to inside, the research methodology is wrapped in a pragmatic worldview which is explained in the next section: research worldview. The second and third layers, approach to theory development and methods, were introduced in this section. The fourth layer, strategy, is introduced in the third section. The fifth and sixth layers are introduced in the instruments and data analysis sections.

Research Worldview

The outer layer of the onion is the worldview. Creswell (2018) defines it as the “general philosophical orientation about the world and the nature of research that a researcher brings to a study” (p. 45). The worldview informs theory, the techniques for analyzing the data, the language, and the final results. Saunders et al. (2019) equate worldview to research philosophy and define it as the “system of beliefs and assumptions about the development of knowledge” (p. 130). So worldview and research philosophy, for practical purposes, are synonyms.

This study uses pragmatism as a suitable worldview since the research question relates to concerns on institutional problems. The enquiry is related to institutional strategies to strengthen the activities in internationalization. Creswell (2018) points out that “pragmatist researchers look to the ‘what’ and ‘how’ of research based on its intended consequences—where

they want to go with it” (2018, p. 63). So, for research on institutional issues, is practical to adopt the pragmatic worldview.

Pragmatic philosophy is concerned with application and defines knowledge as dependent on the context, it only exists and stays in force if it offers practical solutions (Coghlan & Brydon-Miller, 2014). So actions are determined for their context, linked to changes, and depend on the shared beliefs of a society (Morgan, 2014). As a research worldview, according to Creswell and Plano (2018), pragmatism defines reality as composed of multiple perspectives depending on the context (ontology). It uses practical methodologies defined as “what works” (epistemology). It includes biased and unbiased individual perspectives on the world (axiology). Finally, it applies formal and informal style of writing (rhetoric). In Sum, pragmatism assumes a practical perspective on research, determined by the context and by what is useful for answering the research question.

Thematic Analysis

In qualitative methods, the raw data are documents: books, images, interviews, observations, writings, etc. Coffey (2014) defines documents as the ‘physical traces’ of social settings. The author characterizes documents as data or evidence on how individuals, groups, social settings, institutions, and organizations represent and account for themselves. So, the analysis of documents is valuable because it provides “a mechanism and vehicle for understanding and making sense of social and organizational practices” (Coffey, 2014, p. 367). It is to say, documents are the recordings of daily practices.

Documents have different relationships with the facts, Scott (1990), according to the proximity of the texts to the source of origin, classified them as primary, secondary or tertiary. Primary documents are produced by those experiencing events first hand (minutes, news, interviews, etc.). Secondary documents are constructed by others to represent an event (narratives, movies, fiction, etc.). Tertiary documents are compilations of academic reflections (encyclopedias, gray literature, etc.). This study uses primary documents collected from university websites and produced through interviews. This is a cross-sectional perspective, it is to say, at one specific point in time (second semester of 2020), as opposed to longitudinal.

For analyzing the primary documents, this study applies thematic analysis. It is “a method for identifying, analyzing and reporting patterns (themes) within data” (Braun & Clarke, 2006, p. 79). Braun and Clarke (2006) argue that this method has been poorly ‘branded’ and sometimes mentioned as ‘qualitative text analysis’, with a little emphasis in its procedures, despite being widely used. In qualitative studies, most researchers state that the themes ‘emerged from the data’, most times, with no explanations (Braun & Clarke, 2006). Thematic analysis puts emphasis in the process for arriving at the themes and on the role of the researcher in identifying themes, selecting, and reporting them.

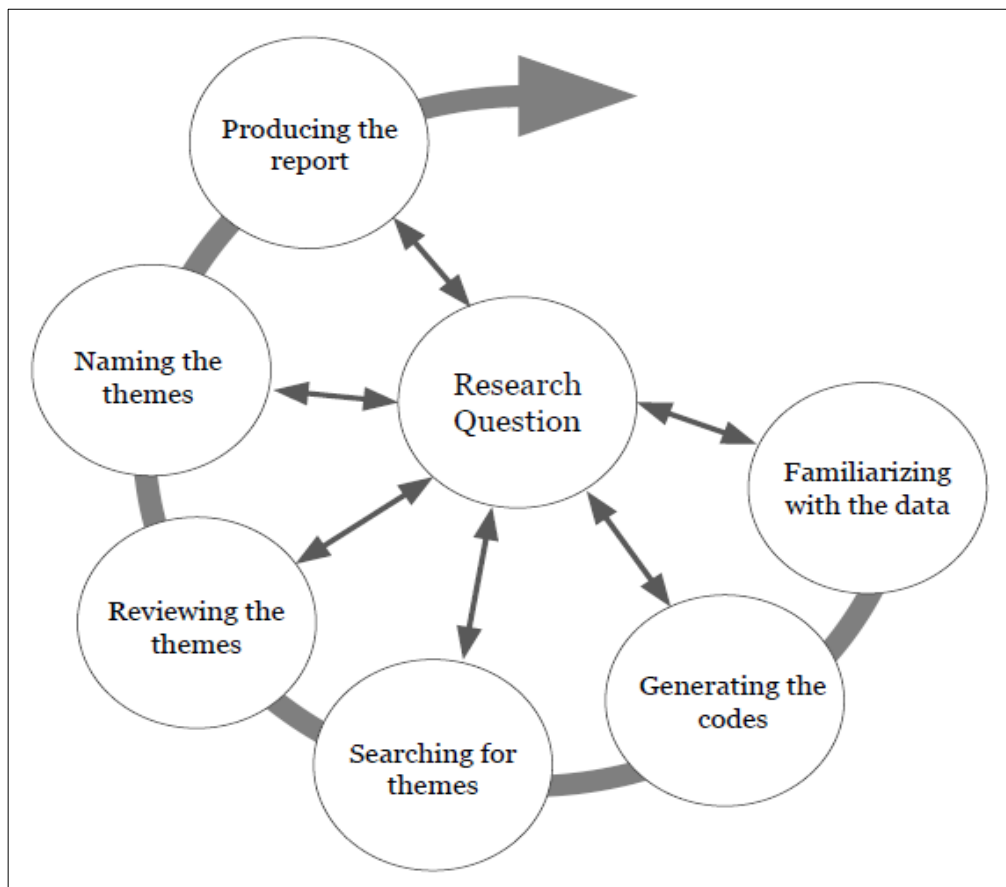
Thematic analysis, according to Braun and Clarke (2006), could be considered as a method itself besides narrative research, phenomenology, grounded theory, ethnography, and case studies. Or, in the terminology of Saunders et al. (2019), thematic analysis is a research

strategy. It could be a pattern-type data analysis technique for supporting other methods. Thematic analysis can support a wide range of qualitative studies: conversation analysis, discourse analysis, interpretative phenomenological analysis, etc. It could support case studies, which aim to make case descriptions. And, despite it being close to grounded theory, it does not aim to generate a theory based on data. So, thematic analysis serves as a realistic, constructionist, or contextualist method since it is flexible. The use depends on the decisions the researchers make (Braun & Clarke, 2006).

Braun and Clarke (2006) characterize thematic analysis as a six-step method. The first step is familiarizing with the data, which includes transcribing (interviews case), reading, and taking notes of the ideas. The second step is generating the initial codes across the whole data set, tagging the information (Saldaña, 2016). The third step is searching for the themes by groping codes. The fourth step is reviewing the themes to check if they work with the dataset, and how they are related and differentiated. The fifth step is defining, naming and discerning the story of the themes. The sixth step is writing the report, grounding it on the coded data. Figure 5 illustrates this process, in which each step is spinning around the research question.

Figure 5

The six steps of thematic analysis.



Note: adapted figure by merging “Using thematic analysis in psychology” by Braun, V. and Clarke, V., *Qualitative Research in Psychology*, 3(2), p. 87, (<https://www.tandfonline.com/doi/abs/10.1191/1478088706qp0630a>), Copyright 2006 by Taylor & Francis and “Qualitative Text Analysis: A Systematic Approach” by Kuckartz, U., p. 186 (https://doi.org/10.1007/978-3-030-15636-7_8), CC-BY-NC 4.0 2006 by Springer.

Despite Braun and Clarke (2006) proposing a six-step method, Kuckartz (2019) proposes a model of five steps. The authors agree in the first and second step, familiarizing with the data and generating the codes. For the third, fourth and fifth steps, Braun and Clarke (2006) propose concentrating on searching, reviewing and naming the themes. While Kuckartz (2019) proposes coding and analyzing the codes, letting out the themes identification. So, Figure 5 takes the representation of the process of thematic analysis elaborated by Kuckartz (2019) and enhances it with the steps proposed by Braun and Clarke (2006). The result highlights the work implied in finding, analyzing and naming the themes.

Data Analysis and Procedures

The procedures describe the processes involved in collecting, analyzing, and arriving to the results. First, the sample was delimited. Second, the interview protocol and informed

consent form were designed (Annex 1 and 2). Third, the sample was contacted with a recruiting email (Annex 3). Fourth, the data was collected with interviews (recorded and transcribed) and from the internationalization websites of the institutions. Fifth, the data was coded through Qualitative Data Analysis Software—QDAS (Atlas.Ti). Sixth, a coding framework was constructed through a data-driven approach. Seven, reliability was checked with a peer for inter-coder agreement. Eighth, the themes were identified. Ninth, the report was written. And finally, the participants received a report to check validity.

As mentioned, Braun and Clarke (2006) characterize content analysis as aiming to show meanings by finding patterns or themes in the data. So, thematic analysis is focused on explicit meanings. The data could be enhanced through interpretations or reduced through coding. This study takes a qualitative approach to thematic analysis because this strategy allows looking for themes inside the texts while reducing them for arriving to conclusions grounded on the data.

Once the data is in the form of text, the next step is coding. This step is defined by Saldaña (2016) as a decision-making process in which the researcher selects meaningful pieces and adds a tag. There are three approaches for coding the data: inductive, deductive, and mixed (Braun & Clarke, 2006; Kuckartz, 2019; Saldaña, 2016). The first, inductive, bottom-up or data driven coding, identifies themes in the data without a pre-designed coding framework. It results from the of raw data. The second, deductive or concept-driven coding, uses a coding framework designed previous to the analysis. The data is organized in the preexisting codes. For the third, the blended approach, there is a pre-designed coding framework which is complemented with the codes emerging from the data. This research will approach coding from the data-driven perspective, since it allows discovering the patterns or themes of the data.

According to Saldaña (2016), codes are the first level of abstraction in which there is a “summative, salient, essence-capturing, and/or evoking attribute” (p. 3). So, a code is a tag that shows this segment of data has an intrinsic value for the research. Creswell (2015) recommends coding complete paragraphs, assigning names that reflect the same words of the dataset and using between 30 to 50 codes. Fries (2014) recommends a higher number of codes, between 50-300 codes that also reflect the words of the participants. After the first round of coding, the result is the code-book (in data-driven approach), which has the name of the code, description, inclusion criteria, exclusion criteria, typical examples, atypical examples, and “close, but not” description.

Another decision to make is the level of abstraction of the coding. Researchers could code explicit pieces—evident meaning—of information. Or they could code the latent meaning of the data, that requires analysis to find the underlying assumptions, beliefs, ideologies, theories, etc. Braun and Clarke (2006) posit that:

the themes are identified within the explicit or surface meanings of the data, and the analyst is not looking for anything beyond what a participant has said or what has been written. Ideally, the analytic process involves a progression from description, where the data have simply been organized to show patterns in

semantic content, and summarized, to interpretation, where there is an attempt to theorize the significance of the patterns and their broader meanings and implications (Patton, 1990), often in relation to previous literature. (p. 84)

According to Creswell (2013), coding has three cycles: Open coding that assigns labels to the raw data. Axial coding that draws relations among themes. And, selective coding, that creates the story by relating the themes.

After the coding, broader units of meaning are constructed. According to Saldaña (2016), a theme “is an outcome of coding, categorization, or analytic reflection, not something that is, in itself, coded” (p. 14). A theme is based on the codes, but represents a higher level of abstraction. And following Braun and Clarke (2006) a theme “captures something important about the data in relation to the research question, and represents a level of patterned response or meaning within the dataset” (p. 82). A theme cannot only be characterized as something recurrent or across-cases element, it also can be an isolated topic that has relevance for the research question. The theme does not exist purely, independently of the researcher, it is grounded on data. According to King and Brooks (2018) the researcher plays a role of curator by selecting the themes.

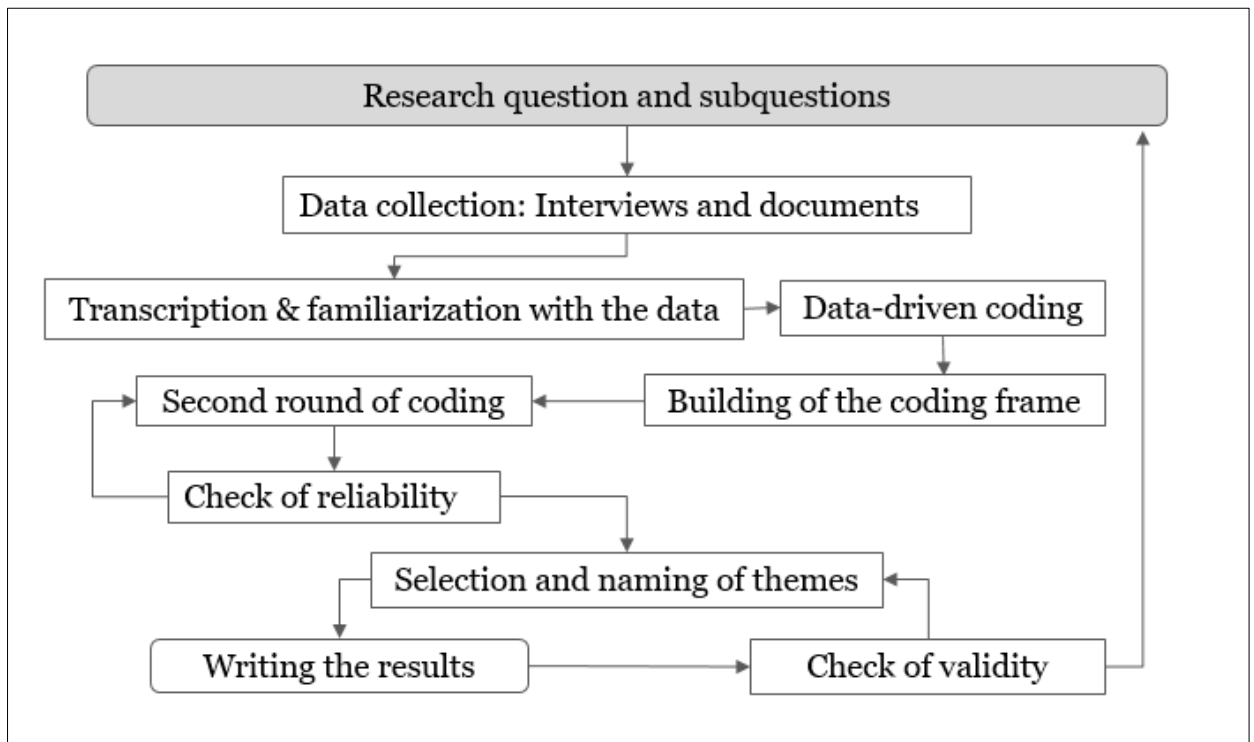
Once the information has been analyzed and there is a result, it must prove consistent. The first technique is reliability, a technique for evaluating the accuracy of the instruments. Syed and Nelson (2015) define reliability as the “consistency of a measure, or the degree to which scores approximate each other across multiple assessments of an instrument or multiple ratings of the same event” (p. 1). And, for thematic analysis, Saldaña (2016) suggests applying inter-coder agreement. It means that two coders code the same text and the agreement must be about 85%-90%. For this study, an inter-coder agreement was conducted with a peer developing the same master program.

At a higher level, once the results are defined, it must be tested that they are probable or conceivable. This step uses the concept of validity. According to Creswell (2015), validity “means that the findings are accurate (or are plausible)” (p. 409). The qualitative results could be validated with researchers, participants, or reviewers, by having their concept on the final results. Braun and Clarke (2006) suggest reading the results and compare them with the data and test the coherence of the data and the results. For this study, the results are compared with the data to determine the validity, the participants will receive a preliminary report to validate the results and include the suggested changes.

To better picture the research procedures, Figure 6 outlines the process of the study. This figure illustrates the steps in thematic analysis from the perspective of the data flow and its connection with the research question.

Figure 6

Flowchart of procedures.



Note: Steps followed by the methodology to answer the research question. It starts with the research question and sub-questions. Each box represents a procedure. It starts with the data collection and ends with the writing of the results, that responds to the research question and sub-questions. The arrows represent the flow of information from a specific procedure to the next one.

The procedures represented in Figure 6 are low level and a concrete set of actions to treat the data. This contrasts with Figure 5, that focused on the higher level, represented for the worldview, approach, and methodology. So it is necessary to consider that this flow of procedures responds to higher-level concepts. And as a whole, the two perspectives, orientate the data collection, analysis, and the expected results.

Instruments and Ethical Issues

This study collected primary documents with two techniques, document collection and semi-structured interviews. First, the information on internationalization from the website of the universities was collected. The websites contain the information of the activities, programs, and, most of the time, the outcomes (facts and figures). This data presents the characteristics and the plans they are executing for internationalization. The documents are primary documents since they were created without a formal interpretation, and they represent a picture of the institutional plans, programs, and promotion of internationalization.

In a second step, data was collected by interviewing academics and staff involved in internationalization activities. Creswell (2015) defines interviewing as asking open-ended questions, which “enables individuals to provide personal perspectives to interviewers” (p. 269). Interviews allow studying detailed views by recording and converting to text the interactions. Interviews use open-ended questions to allow the interviewee a wide range of possibilities for the response. According to Creswell (2015), the types of interviews are one-to-one, focus groups, telephone (which should include video calls), e-mails, and open-ended questionnaires. This study used video calls to collect the information.

For the interviews, a protocol containing the sequence, purpose and the actual questions was designed in advance (Annex 1). This protocol was tested with 3 volunteers that took part in pilot interviews to check the clarity and accuracy of the questions. Participants received the protocol at least one week in advance and responded to the pre-established set of open questions. The interviews were conducted and recorded through video communications platforms, which allows retrieval of the video for transcription of the audio.

Before starting the interviews, it was a key to anticipate the ethical issues raised by the study. For this purpose, participants were informed and asked to sign a consent form (Annex 2) to agree on the advantages and risks of participating in the study. For protecting the rights of the interviewees, Creswell (2015) suggests that researchers must (1) submit a document describing the project and (2) make sure that participants complete a consent form. Responding to this requirement, this study designed a consent form including the two elements: (1) describing the purpose and aims of the study and (2) informing the procedures of the interview, benefits, risks, privacy of the data concerns, withdrawal procedures, researcher contacts, affiliation, and supervisor information.

As benefits, it was highlighted that the results will contribute to discuss the internationalization of virtual universities. The results will be a resource for their internationalization plans and will contribute to enhance their international activities. The identified risks highlighted, first, the possibilities of breaches for confidentiality, avoided by assigning code numbers to the recordings, keeping the files password protected, and guaranteeing confidentiality. Second, interview fatigue, avoided by not extending the interviews further than 50 minutes (Annex 2).

Sample

This sample of this study is a nonprobability purposive sample, the participants were selected according to the purpose of the research and delimited according to specific inclusion and exclusion criteria (Daniel, 2012). Nonprobability sampling describes any method in which some cases have no chance for selection in the study” (p. 1536). In this study, institutions were selected according to the criteria of being associated with the International Council for Open and Distance Education (ICDE), being defined as distance/open/virtual institutions, and using a language familiar with the researcher (English, Spanish or Portuguese).

Virtual universities are grouped in associations for distance and open education such as European Association of Distance Teaching Universities (EADTU) (Netherlands), The Online Learning Consortium (OLC) (USA), Quality Matters (QM) (USA), among the most recognized. The most comprehensive organization is ICDE (Norway), since they group institutions worldwide. ICDE was the organizer of the Global High-Level Forum 2015, in which it was released the *Paris Message: Online, Open and Flexible Higher Education for the Future we want, From Statements to Action: Equity, Access, and Quality Learning Outcomes*. This declaration calls on governments, higher education leaders, academic staff, and students to take action through online education.

ICDE includes a list of members on its website: virtual institutions, distance education institutions, blended operations institutions, and associations of distance education. This information was converted into an excel database for allowing the generation of structured queries, qualification (by visiting each website), and quantification of the information. For 2020, ICDE groups 186 members: 64 from Asia, 51 from Europe, 32 from the Americas, 19 from Africa, 11 from Oceania, and 9 from the Middle East. For familiarity of the researcher with the languages and contexts, the sample was limited to Europe and the Americas. The criteria for classifying these institutions were the offer of under and postgraduate degrees, and the claim that their main modality of teaching is distance-online. As a result, there are 6 online higher education institutions associated with ICDE in the Americas and 15 in Europe.

The research question limits the sample to Europe since most of the countries have one virtual university, they cooperate in the same umbrella organizations, and they belong to the European Higher Education Area. So it was necessary to contact the international offices of the institutions and academicians involved in international promotion. The reached number of the institutions participating was five. Additionally, the websites of the internationalization section of the 11 institutions (including the ones participating in the interviews) were included in the analysis to guarantee more representativeness (taking advantage that those websites are in English).

Nonprobability purposive sampling, according to Daniel (2012), has five elements. The (1) definition of the target population: virtual universities. The (2) identification of inclusion and exclusion criteria: associated with ICDE, in Europe, and familiar language to the researcher. The (3) creation of a plan to recruit the selected population: direct contact through email. The determination of the (4) sample size: at least 25% of the sample. And the selection of the (5) targeted number of population elements: five participants.

In Sum, chapter three described the research methodology. It first section introduced the concept of the research onion to synthesize the research decisions. Then, it introduced the pragmatic worldview as a suitable one to the research question. Then, it presented thematic analysis as the general strategy to analyze the data. This is complemented with the instruments to collect the data, the procedures for treating the data, and the reliability and validity measures. Finally, the chapters introduced the delimitation of the nonprobability sample. As a whole, the chapters stands for the qualitative method used to conduct the study.

Chapter 4: Findings

Chapter 4 reports the findings of the study, in four parts. The first part presents the results of the thematic analysis, which describes the wide panorama of the internationalization of European virtual universities. It presents five themes in which data was organized: the developmental mission, the global competition, the cooperation for IoHE, the leadership in online higher education, and the intuitional capacity building through IoHE.

The second part answers to the first research question on what is internationalization and its role for European virtual universities. The third part answers the second research questions on what is the intuitional approach of European virtual universities to internationalization. Finally, the fourth part answers to the third and central research question on the challenges that European virtual universities face in internationalization. The four parts of the chapter outline the findings on the data and provide a structured view of the topics found with the collected data.

The IoHE in European Virtual Universities

This first section presents the themes derived from the thematic analysis. It is the result of coding the transcription of the interviews (5) and the websites of internationalization of virtual universities (11). The coding process produced 209 codes, gathered in 29 groups, and developed in 5 themes (see Annex 5): the developmental and humanitarian mission, the global competition, the cooperation for internationalization, the leadership in online higher education, and the intuitional capacity building through internationalization. The interviews provided descriptions and rationales, and the websites the details and examples.

The first theme is the developmental and humanitarian mission of European virtual universities. Participant A posited that the mission of virtual universities is “to give the opportunity of education to learners who otherwise were prevented from education because they were in remote areas or because they had other commitments in life”. European virtual universities come from the tradition of distance education and its commitment to enhance access. In this regard, participant E stated:

It is in the DNA to work on inclusion for diversity so that all students can enter. (...). They (virtual universities) are specialized and making tools available for different categories of students that have different kinds of disabilities, for example, or disadvantages. So that’s also something that the virtual universities are really keen on and working on now.

The experience that European virtual universities have in distance education allows them playing a key role in enhancing access.

The institutions identified themselves as working towards SDG 4. In their plans, they addressed the goal *ensure inclusive and equitable quality education and promote lifelong learning opportunities for all*. For these activities, it is vital to work and cooperate internationally with other governmental and non-governmental actors. This way, European

virtual universities can contribute innovative approaches to inclusive higher education in regions where there is not an offer, or for learners that are excluded from higher education.

This action includes the integration of students and academics that have temporarily lost their possibilities of study. It includes the migrant population and population affected by natural disasters or wars. One example is the University for Refugees developed by the International Telematic University UNINETTUNO. This project supports refugee students and academics to access higher education.

Another way to contribute to enhance access is to offer flexible pathways to higher education. This has to do with flexibility in location, time, entry requirements, previous study recognition, and study pathways. The flexibility is related to the difficult conditions of some publics: populations in conditions of refugees, in contexts of war, and natural disasters. For these populations, access to higher education is already difficult and virtual universities facilitate the demonstration of previous knowledge and skills, and to keep their paths to a degree.

This flexibility allows European virtual universities to cover lifelong learning. The increase in the population's age, the need of upskilling, reskilling, and deep skilling, and the constraints to restart education make flexible offers more pertinent. This opens the opportunity for creating short, tailor-made, and industry driven courses for the working population.

The second theme is the global competition. Virtual universities provided education to their own countries because of logistic (distribution of materials) and language constraints. Since the internet allowed global connection, virtual universities were doomed to offer education worldwide. Participant A described this like:

Now, they no longer attract only students from their own region or country. Because their provision is online, they can attract students from all over the globe. So it's a global market, it's a global competition. And the more they learn about students from different cultural contexts, the better they stand in the global education market.

The possibility of worldwide operations is tied to intercultural understanding. Institutions expand their offer and stand in the market when they specialize in cultural segments. Hence the knowledge of cultural contexts restrict internationalization.

The market of European virtual universities is characterized by the low competition. Most countries in Europe have one virtual university, specialized in education in the local language. Participant E said:

The competition among the virtual universities is not that big. They have mainly offerings in their own language. The major competitors are the European universities with the educational offerings in English. They can offer education all over Europe. So, that would be considered the major competitor. But there is no immediate disturbing competition going on among the universities offering online education.

Since languages such as Dutch, Finnish, Greek, Norwegian, among others, allow little flexibility for internationalization, some institutions switched to English to reach other countries.

Countries with a colonial past have the advantage of language, France and the Francophone countries; Portugal and the Lusophone countries; Spain and Latin America.

The competition in online higher education is given by institutions different to virtual universities. Participant B claimed:

For me the competition are programs such as MOOCs, microcredits, micromasters, and other certifications offered by recognized universities such as Harvard, MIT, Stanford. They are offering very cheap prices, not as expensive as a master's degree. (...) What you must do now is to establish cooperation and alliances with them to be able to add on to the activities they are developing.

Competition is also given by on-campus institutions. Participant E expressed: "The main challenge is how to position yourself in relation to traditional universities who are becoming more and more online. It is becoming more and more in the same playing field as the virtual universities". The competition for European virtual universities is given by, first, MOOCs platforms offering micromasters, microcertificates, minidegrees, nanodegrees, specializations, professional certificates, and web badges. Second, reputed on-campus institutions that offer short courses. Third, on-campus institutions that expanded their formal educational offer to online formats.

In the global competence for resources, European virtual universities have implemented six main international strategies. First, developing degrees in English to compete for students at a global level. Second, strengthening the offer in a specific language and compete for students in specific countries or regions. Third, diversifying the educational offer with joint degrees and microcredentials. Fourth, cooperating under umbrella organizations to take part in international projects. Fifth, creating partnerships with international governments, industries, NGOs or IGOs to develop projects. Finally, cooperating with on-campus institutions to develop joint educational products or projects (strategies fourth, fifth and sixth will be enhanced in the next theme).

The third theme is the cooperation for internationalization. The participants highlighted cooperation as the most important strategy for IoHE. Participant B said:

In fact, we do not speak so much about internationalization. We speak about international cooperation. Basically, the important thing is to cooperate. It is not this idea of importing and exporting people as such. What we are looking for is to cooperate. Mobility plays the most important role in on-campus internationalization, for virtual universities that place is cooperation.

In fact, participants agree that the institutions cooperate instead of competing. Participant A said:

The collaboration among universities is easier internationally than nationally. Internationally, there is no real competition, so they are much more respectful, cooperative, constructive (...). At a national level, you are competing not only for students but also for state funding, and that makes it more difficult to collaborate at the national level.

They have cooperated in networks and umbrella organizations, with educational platforms, with multilateral organizations, with on-campus institutions, for developing open educational resources (OER), in teaching, research, third mission, and for benchmarking.

At a European level, most of the cooperation is through umbrella organizations. The continental umbrella organizations are: E-Teaching.org, the Empower Network, the European Association of Distance Teaching Universities (EADTU), the European Distance and E-Learning Network (EDEN), the European University Continuing Education Network (EUCEN), and the International Council for Open and Distance Education (ICDE). These organizations develop projects, research, dissemination of results, and sharing of good practices.

European virtual universities cooperate with platforms as EdX, FutureLearn, MiriadaX, The European Multiple MOOC Aggregator (EMMA), among others. In this respect, in 2019, EduOpen, FUN, FutureLearn, MiriadaX, and OpenUpEd, under the coordination of EADTU, launched the Common Microcredential Framework (CMF). This framework creates mechanisms for integrating emerging online credentials into formal education and making them readable.

European virtual universities highlight the cooperation with IGOs, NGOs, and international governments. Participant D asserted:

We work on projects in partnership with governments, NGOs, private organizations, and other universities to deliver programs worldwide. With our partners, we have developed programs and projects that have a big impact on different populations. For example, in Brazil, we have a program for training basic education teachers in pedagogy, and contributing to their professional development.

Cooperation at this level implies taking part in projects for enhancing access and building capacities through online and distance education.

The cooperation among European virtual universities and on-campus universities has consolidated an international blended cooperation. On-campus students can take online courses or semesters, and online students also have the possibility of going to campus. Participant A asserted:

It blurs the boundaries that there were between distance providers and on-campus education providers (...). You can also be a distance education student and have a blended concept and be able to go to campus. So, that can be disturbing and kind of blurs the competition. But for the learners, I believe, it is a good thing because not only adults want this flexibility.

The consolidation of online education makes on-campus education more flexible. Virtual universities can represent a partner for enhancing internationalization at home. Virtual and on-campus universities develop network curricula, international curriculum harmonization, cooperative online international learning (COIL) projects, mirror classes, and virtual mobility.

OER is highlighted by the participants as a strong cooperation source. Since virtual European universities come from the tradition of distance education, open resources are vital

for reducing costs. Hence cooperation plays a vital role to develop open resources available for international distribution.

Other ways of cooperation are cooperation for research teaching, third mission, and benchmarking. For research, European virtual universities cooperate in projects worldwide. In teaching, institutions offer mobility of professors and joint projects. In third mission, they make knowledge transfer and tailor-made courses for industries. Finally, other popular source of cooperation is the benchmarking with peer institutions around the world, which contributes to spread good practices and develop mutual beneficial strategies.

The fourth theme is the leadership in online higher education. Keeping the leadership in online education is key for European virtual universities to stay in force. Participant E said: It should be one of the goals, to innovate education by using more online modes of teaching and making it possible to have better collaboration at international level. (...). It's about enriching the programs; giving the students the opportunity to have an international academic experience; making it possible for your university staff to connect with other researchers at other universities and broaden their perspective or connect their research. And it's also about positioning your university as a more international oriented institution.

Internationalization plays a central role in keeping the leadership in online higher education for institutional recognition, OER, and innovation in lifelong learning.

The legal recognition of degrees is obscured by the dispersion of the terminology outside the Europe Higher Education Area. Different countries use different terms, adapting terms and changing legal requirements for every country is almost impossible. Participant A asserted:

I think we just have to live with the different terms and the different interpretations. So my advice is to explain what the concept really is, explain what we expect from you as a student, what the teachers would provide, what are the activities for the exams. You need to describe it, maybe visualize it (...). It is more to try and communicate, be transparent of their own quality assurance processes, and the concepts on what they are doing.

In this aspect, international visibility at different levels plays an important role for legally recognize transnational online educational offers.

European virtual universities are advocated to demonstrate their quality and leadership because of the lack of mechanisms such as international accreditations, rankings, or international frameworks specialized in online education. International visibility could play a role for international degree recognition. For that reason, European virtual universities have kept a close work with peers, on-campus institutions, and governments to play a leading role in transnational online higher education.

European virtual universities identified themselves as leaders in open educational resources (OER), because of their long tradition of distance education. OER refers to textbooks, videos, software, and course materials that can be retained, reused, revised, remixed, and

redistributed (the five Rs). OER play an important role to lower the cost of access to higher education, also in strengthening open science and open innovation. It allows free distribution of materials: language teaching, health education, teacher education, among other topics. For this reason, international cooperation for the development of OER remains an essential activity to keep the leadership in online education.

European virtual universities identified to be leaders in flexible higher education. Flexibility in the online offer of education has allowed them to respond to the demand of lifelong learners and learners with special needs. The institutions do not just offer classes broadcasted online, they also offer possibilities for asynchronous work, which allows people to work, do other activities, and study at their own pace. So flexibility allows the intuitions to adapt to wider publics to whom on-campus universities traditionally do not reach.

The fifth theme is the intuitional capacity building through internationalization. The major responsibilities regarding internationalization, in the internationalization unit or equivalent, in the European virtual universities, are:

- Establishment of strategic alliances, agreements, and partnerships: universities, IGOs, NGOs, and governments.
- Networking with targeted partners and participation in international networks.
- Participation and coordination of internationalization events for the academic community.
- Monitoring or development of international projects.
- Attracting international funding opportunities or fundraising.
- International promotion and communication of the institution.
- Providing practical information for the academic community, prospective students and to attention to specific regions.
- Coordination of the logistics for virtual and physical mobility.
- Coordination of local and international internships and traineeships.
- Coordination of university industry collaborations.
- Getting international training and professional development for the staff.
- Collection of students' and staff's experiences related to internationalization.
- Articulation of the internationalization plan and strategies to the institutional strategic plan.

This list of activities shows a diverse range of actions that internationalization can play in a virtual university.

The institutions usually have a unit in charge of internationalization. Sometimes, the units have names like international development, international cooperation, international affairs, Communication and international relations, communication and quality management, among others. Some institutions do not have an international unit and the functions are distributed among different positions.

The interviewees agree on the importance of the relations that the staff bring to the university. Participant E said:

Mostly, the international collaborations come from professionals who know each other. There is not a kind of a strategy like, we have to look for another university that offers something on humanities or something like that. No, it is because mostly that professors know each other and, then, they think about how we should do something together and then offer it to both of our students (in two different institutions).

Internationalization could be a decentralized activity, developed in parallel to the general international strategy.

The international units, in most of the cases, become a unifying agent. It helps to build capacities for fostering international cooperation inside the institution. Also, it encourages and helps staff in developing international cooperation links. It develops its own strategic plan for capacity building and for international projections. And, in few cases, the international unit manages international projects and funding attraction. This shows that the internationalization units could play very complex tasks that go beyond the traditional coordination of mobility, which is one of the major functions in on-campus education.

The Role of IoHE in European Virtual Universities

This section answers the first research question: What is internationalization and its role for European virtual universities? The data of this section relies on the interviews. It presents the views of the participants to characterize IoHE in European virtual universities and the roles it has in the intuitions.

As mentioned in the theme one of the previous section, a driving rationale for distance education, and for engaging in international cooperation in distance education is developmental rationales of enhancing access. As expressed by Participant A, the mission of virtual universities is “to give the opportunity of education to learners who otherwise were prevented from education because they were in remote areas or because they had other commitments in life”. The mission is developed at an international level and it has a curricular and institutional dimension, as expressed by the participants.

Participants identified IoHE as a core activity in distance education, since the provision is global. The academic communities for European virtual universities are naturally international, and it implies an institutional effort to make their educational offer relevant for different contexts. Participant A said:

Internationalization and the globalization are really the core of the organization. It is to be an organization relevant for everyone, no matter where they come from on the globe. The benefits would really be the diversity of the community, which gains a broad perspective.

This perspective shows how, since the service of education is provided for students abroad, it must adapt to the international and even global environments. This adaptation offers the

possibility to the academic community to access knowledge with a deliberate international dimension.

This central role of IoHE is operationalized in strategies of internationalization at home and internationalization of the curricula. Participant D defines internationalization as:

For us, what makes sense is either internationalization at home or internationalization of the curriculum. The fact that what you are teaching is not local, that you are internationalizing from your home (...). At a more institutional level, I would say that the whole issue of cooperation is important: networking, research, teaching, content exchange, content creation, and so on. I believe that here, virtual universities have an advantage and a disadvantage. The advantageous part, I think, is everything that has to do with the creation of networks, cooperation agreements, joint work, exchange of experiences, that is, everything that is the institutional approach. Why? because we already have a very prepared mechanism for exchange, for collaboration, for cooperation, for joint development with the universities in any part of the world. There is only one thing that is a disadvantage (...), language (in this case, a language different to English). Language is the great barrier, not technology.

In this excerpt, Participant D separates different dimensions in which internationalization plays a role for the institution: curricula, research, teaching, content (creation and exchange, which stand for OERs), and networking. The participants also highlight language as the major barrier. It forces universities operating in languages with no international public to switch to English. It is important to highlight that virtual universities identify Internationalization as a strength. Since they have had a distance operation mode, they established distance networks and cooperation strategies to allow reaching diverse publics and institutions locally and internationally.

Participants consider distance education as intrinsically international. Hence, they differentiate distance education from virtual mobility. Participant E makes this distinction:

The difference between virtual mobility and distance education is that distance education is a student to institution contract. You take a course you pay for that. You have an agreement for you to follow that course. Under the category of virtual mobility, it is a contract among institutions making, facilitating, mobility for their students. It is not the student that signed the contract. It is bilateral or multilateral. The universities and students benefit for this mobility scheme fully facilitated by the university. They can take courses from another university like it was offered by their own university.

Participant E separates the functions of recruiting in distance education, which is considered already international, from the construction of mobility schemes for virtual exchanges and projects. Despite in most of the universities these are separated functions, for some universities it is one function, recruiting and cooperation activities, under the communications office.

As a summary, Internationalization is a core strategy to fulfil the missions of European virtual universities: to offer higher education to students that cannot attend on-campus education due to diverse conditions. Internationalization is developed at a curricula and

institutional level. At curricular level it includes cooperation in teaching, development of OER, virtual mobility, e-learning projects, among others. At an institutional level, cooperation includes research, third mission activities, and networking.

Institutional Approaches to IoHE

This section answers the second research question: What is the institutional approach to internationalization? It focuses on the institutional approaches to operationalize internationalization in the intuitions. This section uses the information of the interviews as a basis for understanding the approaches and information from the webpages of the European virtual universities for providing details on programs and projects.

The theme three characterized the internationalization in European virtual universities as based on cooperation. The participants agreed that the main approach or method for dressing IoHE is international cooperation. They cooperate with umbrella organizations, governments, IGOs, NGOs, industries, research centers, and other higher education intuitions. The cooperation is given at a curricular level (teaching, curricula, materials, e-learning projects) and at an institutional level (research, third mission, networking).

Different to on-campus education, in which the internationalization unit is in charge of alliances, in European virtual universities this role is in charge of the professors and researchers. Participant E said:

Mostly, this international collaboration come from professionals who know each other. There is not the kind of strategy of a university like, we have to look for another university that offers something on humanities or something like that. No, it is because mostly that professors know each other, and then they think about how we should do something together and then offer it to both our students.

Participant A reinforced the idea of international collaboration developed by professionals. Participant A stated: “It is not like, well, maybe we just call a university and say let’s build the program together. Now, this is based on mutual trust and the people are already familiar with each other”. Hence the approach to internationalization is based on the network of the professors, researchers, and staff of the university.

The role of academic staff goes beyond internationalization of the curricula. They start with academic relations that can scale to different levels. This is the case of Participant C that declares:

What we have done as a strategy is to get to work with institutions in the countries (...). Cooperation with universities in these countries have helped us go to the Ministry of Education level. We have started, for example, to work with national accreditation agencies from these countries (...). For example, I myself have participated in the writing of the guidelines for the recognition of online programs for the accreditation agency of Chile. In other words, we have built knowledge. I insist once again on the issue of cooperation o collaboration, that is the way we enter (to international markets).

Academic staff cooperation act at different institutional levels. They have the role of establishing and consolidating international relations of the institutions.

As mentioned in theme two, global competition, another important approach is intercultural understanding. Participant B explains that “the cultural contexts could be a real challenge if you have developed the course from a European perspective, the students wouldn’t even understand what the task is and it could require long trust establishing period to be able to get there”. Hence it requires defining target countries, cultures, or regions to work. For that reason, Participant D declared that “what makes sense is internationalization at home or internationalization of the curriculum”. Adapting the educational offer is critical for European virtual universities to operate internationally.

Two additional approaches are cooperating with on-campus education and developmental or governmental organizations. The first cooperation implies contributing to the development of the internationalization at home through digital means. This is reflected as: “we cooperate with traditional universities for them to offer online internationalization, as an at home activity” (Participant A). The second implies contributing to enhance educational access. Participate A explains it as: “we offer opportunities for education to learners who otherwise were prevented from education because they were in remote areas or because they had other commitments in life and so on”. This approach means working with organization engaged in expanding access to education internationally. So, European virtual universities have four approaches to IoHE: academic cooperation, intercultural understanding, on-campus support, and development though education support.

The purposes of the European virtual universities to work in IoHE are diverse. These purposes are presented in eight dimensions that respond to general institutional purposes: curriculum, institutional capacities, access, research, OER, strategic cooperation, and third mission. The eight reasons of European virtual universities to strengthen internationalization are:

- To enhance international access to higher education by offering flexible opportunities for lifelong learners, students that are prevented from higher education, and students that choose online higher education (students).
- To internationalize the curriculum and teaching / learning process by including international, intercultural, and global components in the study material, teaching strategies, and outcomes of the programs (curricula).
- To build institutional capacities through internationalization, by implementing internationalization training for the staff. This way, the institutions enhance the existing capacities (faculty, staff, and governance).
- To produce OER through international collaboration with other researchers and institutions through online or onsite collaboration (OER-research).
- To develop strategic international cooperation with governments, IGOs, NGOs, networks, and institutions working in enhancing access to higher education through online, open and flexible education (international engagement).
- To broaden the scopes of the research mission by collaborating with research centers worldwide, online and onsite (research).
- To broaden the third mission by collaborating with industry internationally (third mission).

These eight general dimensions cover the three missions of higher education (teaching and learning, research and extension), plus dimensions such as student, faculty, staff, governance, OER, and international engagement.

The purposes and approaches are operationalized in the program. This list, constructed by coding the websites on internationalization of European virtual universities, reflects the topics of the programs in which the institutions are working:

- International virtual mobility (semester or courses) between a virtual university and other virtual or on-campus universities.
- International physical or online internships.
- International higher education for refugees and populations that have lost the opportunity to access or continue higher education.
- International invited professors and researchers.
- International physical mobility and research stays.
- Hosting of international scholars at risk (refugee scholars).
- Cooperative or network curriculum with other institutions.
- International short and tailor-made courses.
- International professional development courses for lifelong learners.

- International development of OER and MOOCs.
- International e-health programs.
- International training workshops and job shadowing for staff.
- International alliances with ministries of education and multilateral organizations.
- Accompaniment and support to international virtual universities that are building capacities.
- International research and innovation collaboration.
- Open innovation and open science programs.

This sixteen items list collects programs developed in European virtual universities under different names. They can be grouped as extensions of the purposes, although some of them are cross-sectional to different purposes.

Finally, the outcomes of internationalization for European virtual universities are identified as the generation of enriched programs and diverse academic communities to strengthen the mission and identity of the institution. On one side, working in implementing internationalization allows offering international experiences, competences and outcomes to the students and staff. This also is perceived as an enhancement of quality, pertinence of the programs, and international acknowledgment. On the other side, internationalization allows to make the mission and educational offer sustainable by attracting diverse funding sources.

The Challenges of European Virtual Universities in IoHE

The analysis of the interviews identified eight challenges for the enhancing the internationalization of European virtual universities. These challenges result from the interviews. Each one, following Demos Helsinki (2018), condenses three aspects: problem, as the situation preventing the vision from happening; challenge, as the issue to be addressed; and vision, as the desirable future (Annex 4). The challenges could be located in different institutional dimensions, such as the ones identified by Gao (2019): research, students, faculty, curriculum, engagement, and governance.

Fulfilling the mission of European virtual universities could be considered the biggest challenge. European virtual universities, in line with the traditional mission of distance education, work including of students that are prevented from access to higher education. This mission is now understood as articulated to SDG 4: *Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all*. SDG 4 provides a framework for developing equitable, inclusive, flexible, online models in higher education for all. This mission is the institutional base for the rest of activities and for IoHE.

The following challenges represent calls for action in IoHE for European virtual universities that need to be addressed in different dimensions of the institutions. They go beyond the internationalization units of the institutions and comprehend internationalization of the curriculum, of the research, and the extension. The eight challenges are:

1. **Innovating in lifelong learning:** the rapid technological changes and the continuous innovations in different fields lags human talent that need to upskill, reskill and deep skill continuously. Innovating in lifelong learning could be a crucial in the post-pandemic scenario in which some workers will need to gain new skills. Since lifelong learners are workers, out of the traditional age for on-campus degrees, and with other responsibilities, they need flexible and agile methods for acquiring this knowledge.

European virtual universities will enhance their role in lifelong learning by supplying this demand and by innovating with transferable qualifications readable in both academic and work contexts. Working in this challenge goes beyond supplying the demand of reskilling, upskilling, and deep skilling in fields related to technology. It implies transferring innovations in fields such as agriculture, health, human rights, public management, among others, to populations in remote areas where innovations can play a role in economic and social development. This challenge corresponds to the curricular dimension: the development and management of new programs, readable and transferable across countries.

2. **Integrating intercultural understanding:** higher education, especially undergraduate degrees, respond to contextual needs. It is embedded in specific contexts, dynamics, expectations, power relations, local languages, values, terminologies, management of time, approaches to methodologies, interactions, assessments, etc. For virtual universities, being on the internet is an advantage for IoHE and a disadvantage for the contextualization of knowledge. Hence, for consolidation the operation in international contexts it is necessary to understand the audience, what they are looking for, and what the institutions can offer to them.

This challenge calls for the developments of understanding of the international publics and the mediation between Eurocentric and foreign perspectives on higher education. European virtual universities are working in cooperation with the governments in targeted regions, programs for receiving and collaborating with academics at risk from specific regions, and working with peer institutions worldwide. This challenge relates to the internationalization of the curriculum and the internationalization of the faculty.

3. **Strengthening online options for inter-institutional cooperation involving students:** according to the Erasmus Impact Study (2016) the top three motivations of students to do physical mobility are the opportunity “to live abroad and meet new people, improve foreign language proficiency, develop transversal skills” (European Union, 2014, p. 3). This leaves virtual mobility in disadvantage, since it is more difficult to offer these aspects online. Therefore, participants agree it is necessary to look for alternatives to

physical mobility centered in the quality of contents and innovative approaches that involve international students and activities from other universities.

European virtual universities have currently been working on schemes to facilitate the development of international cooperation, the offer of international on-line student's services, to solve the differences in costs, to create alternatives (virtual mobility, COIL projects, teletandem, mirror classes, and emerging models of collaboration), and to reduce asymmetries in cooperation. This challenge corresponds to the student's dimension, it is to say, the benefits that IoHE could offer to students as the main beneficiaries of education.

4. ***Strengthening collaborative OER and research***: the copyright constraints and the cost for accessing and distributing high-quality materials constitute limitations for educational projects motivated by humanitarian rationales. Distance education traditionally have depended on educational materials for teaching and learning processes. So, the collective creation, use, and adaptation of quality OER are key for online distance education. Together, it is key to enhance the collaboration for strengthening the research in the institutions, which can follow a similar patten to OER collaboration.

In this respect, UNESCO launched the *Recommendation on Open Educational Resources* (2019), aiming to build capacities, develop policies, design inclusive and equitable materials, developing sustainable models, and promoting international cooperation in OER. Educational resources, traditionally exclusive for the owner institutions, become publicly available and can be retained, reused, revised, remixed, and redistributed. Cooperation in OER and research represents a potential for internationalization of the curriculum, international collaboration, dissemination of research results, open innovation, and open science. This challenge is in the research dimension, since it implies the collaboration among academic staff from different intuitions, in their projects and areas of expertise.

5. ***Cooperating and developing microcredentials***: the emergence of online education platforms has led to the proliferation of microcredentials or microdegrees. These platforms could represent the direct competition in lifelong learning and a valuable partner for advancing online education. Their educational offer has growth, and it is not transferable to formal higher education and not readable in different contexts.

So European virtual universities and associations for online and open education have been working in creating mutual understanding for online educational offers, transferability and readability mechanisms. One of the first steps is the *Common Microcredential Framework* launched in 2019. This framework aligns workloads, assessment, identification verification, level, and transcripts to integrate microcredentials into formal higher education. Microcredentials could be important in fulfilling the European virtual universities' mission of enhancing access to higher education. This challenge is in the engagement dimension, since it implies developing alliances with other institutions.

6. ***Enhancing cooperation with international multilateral organizations and governments:*** international governments and multilateral organizations develop projects to enhance access to higher education, to build capacities, and to develop humanitarian actions supported by education. They need the expertise in distance education, international research, flexible approaches, and online resources to develop their actions. European virtual universities need the funding for carrying out the mission of enhancing access in vulnerable contexts.

Hence, the relations with international governments and multilateral organizations create strategic alliances for attracting projects and funding. European virtual universities have gained international recognition and articulated to international peers and networks to consolidate their presence and cooperation at an international level, aligned with their missions. This engagement allows to advocate for enhancing connectivity and access to Internet worldwide. This challenge is in the dimension of institutional engagement, since it implies the institution to develop cooperation agreements and strategies.

7. ***Enhancing international recognition:*** international terminology, quality, accreditation, and reputation frameworks are oriented to on-campus education. This creates confusion internationally that can affect legal and reputational recognition of credentials. As a result, European virtual universities must work in building international reputation and positive reception for their international offer.

European virtual universities have worked on transparency and descriptive communication to illustrate their educational offer. They look for recognition through international cooperation and demonstrating leadership in distance, online, flexible education. These actions are concentrated in strategic international cooperation in teaching and learning, research, extension, and OER. This challenge is part of the governance dimension, since it depends on the strategic goals of the institutions.

8. ***Establishing models for the strategic management of IoHE:*** internationalization in online and open education differs from on-campus institutions' internationalization. Virtual cooperation, mobility, development of OER, among others, are based on academic staff relations and participation in cooperation in international projects. This creates the need of reformulating the functions of the international units for them to play a more strategic role in the institution.

In some cases, they take the form of units coordinating international projects; building internal capacities for internationalization in the institution; supporting the projects attracted by academics and researchers; leading international communications and marketing; or, fundraising. This challenge could enhance the perspectives of a unit in charge of agreements and mobility, as in on-campus institutions. Challenge eight belongs to the governance dimension since it depends on the organizational model of each institution.

These eight challenges collect the problems, lines of work, and shared visions for strengthening the internationalization of the activities of European virtual universities from an institutional perspective. Challenges could be addressed at different levels: programs, faculties, or institutional. Or by dimensions: curriculum, students, faculty, research, engagement, governance. The advantage of the institutional perspective is that it allows to see the broad perspective of the institutions and see the alternatives for the management of the IoHE.

As a summary of chapter four, it synthesized the findings of the collected data. First, it presented the results of the thematic analysis by describing five themes: the developmental mission, the global competition, the cooperation in IoHE, the leadership in online higher education, and the intuitional capacity building through IoHE. Second, it answered to the first research question on the meaning and role of IoHE for European virtual universities. Third, it answered the second research questions on the intuitional approaches of European virtual universities to IoHE. Finally, it answered to the third and central research question on the challenges that European virtual universities face in internationalization by describing eight challenges, the problems they are related to, the future vision and their institutional dimension.

Chapter 5: Discussion

The chapter five discusses the findings according to the theoretical framework. It contextualizes the answers to the research questions presented in chapter four. The chapter is organized into three sections that discuss the findings and aligns them with the theory. The first section examines the findings of the first research sub-question on the role of IoHE for European virtual universities. It explains the meaning, the rationales, and strategies of Internationalization in European virtual universities with the definitions and frameworks presented in the theoretical framework.

The second section addresses the findings of the second research sub-question on the institutional approaches that European virtual universities implement in IoHE. There, the dynamic systems theory is used to explore the purposes, programs, approaches, and results in internationalization of European virtual universities. The third section discusses the findings of the major research question on the challenges in IoHE for European virtual universities and the third research sub-question on the future vision of the challenges. It discusses each challenge with the relevant literature in which they could be better understood.

The three sections allow reviewing the findings from the perspective of the theory of IoHE and understand the particularities of IoHE in European virtual universities, its definition, institutional use, and the challenges that the participants identified as the most urgent.

IoHE in European Virtual Universities: Inclusive Education and International Cooperation

This section discusses the relation of the findings of the first research question, the role of IoHE in European virtual universities, with the theoretical framework. The framework for classifying IoHE activities developed by Knight (2004) identified two pillars or main actions in which institutions implement IoHE: at home and abroad. Beelen and Jones (2015) criticized this framework because it is mutually inclusive, the abroad pillar includes the at home pillar, in fact, the at home pillar, according Beelen and Jones (2015), is the heart of IoHE. The same discussion is found on the finding of the first research question of this study, and was presented in the third theme, the cooperation as the IoHE for European virtual universities.

According to the participants, for European virtual universities, designing a degree program, offering students' services, and building cooperative relation transnational, it means considering the contextual needs and adapting to the international audiences. This has led them to developing engagement, in most cases, with specific geographical regions, to adapt their educational offer. The adaptation is reflected in the fact that the participants agreed that, for European virtual universities, internationalization at home and internationalization of the curriculum are core activities. This focus is the principle of

internationalization at home, internationalization of the curriculum within domestic environments (Beelen & Jones, 2015). For Knight (2012), internationalization at home means working on internationalization of the curriculum, open access education, the composition of the academic community, extracurricular activities, and research. Hence, since the component of mobility of people is absent, the participant agreed that European virtual universities use internationalization at home for preparing the institutions to be mobile and go abroad with their services.

By applying the theoretical perspective of Knight (2012), the deduction is that European virtual universities apply internationalization at home for strengthening their internationalization abroad. The other way around, European virtual universities strengthen their abroad pillar by working in their at home strategies. This is the mutual inclusiveness of the two pillar of Knight, highlighted by Beelen and Jones (2015). In a different perspective, the European Commission (2013), later developed by Hudzik (2015), presented a three pillars model: mobility; internationalization at home; and strategic cooperation, partnerships and capacity building. Hudzik (2015) named this framework as comprehensive internationalization.

The participants agreed that for them, IoHE means strategic cooperation with peers, on-campus higher education institutions, governments, multilateral organizations, among other international actors. For explaining the emphasis in cooperation, the Hudzik's three pillar model is more accurate. The third pillar, cooperation, mixes abroad / at home strategies. It implies abroad / at home activities, such as international joint projects, international publications, research collaboration, OERs, third mission, strategic alliances, and commercial collaborations (Lewis, 2017). As the participants mentioned, the international strategic cooperation, partnerships, and capacity building activities are decentralized in multiple actors: academics, administrative staff, internationalization units, researchers.

The interviewees explained that the mission of European virtual universities is motivated by developmental and humanitarian rationales, aligned with SDG 4. They look for enhancing access to higher education for students that cannot attend on-campus education. The explanation to these developmental and humanitarian rationales, as mentioned by Taylor, 2001, are found in the roots virtual universities have in distance education. The transformation of distance and open education into online education is denominated by Taylor (2001) as a transition to an intelligent flexible learning model. This model, with its services on the web, allows offering a flexible and open approach to higher education (Paul & Tait, 2019).

The flexible open approach mentioned by Taylor (2001) allows virtual universities to attract students' profiles that do not fit with on-campus education. Distance education traditionally has offered access to students in remote areas, lifelong learners, or students that for any other reason cannot access on-campus education. The participants understand this function as the core of their educational activities. The traditional work with students

excluded from the higher education systems has paved the way for them to have a role in the refugee crises around the world, in contexts of war and natural disasters, and in lifelong learning. Thus, additionally to the developmental rationale, it is added the humanitarian rationale. Both rationales imply openness for engaging in international educational activities.

The intervention of international higher education in contexts with humanitarian crises is the humanitarian rationale introduced by Streitwieser et al. (2019). After analyzing the educational interventions of virtual American and European universities in refugee camps, Streitwieser et al. (2019) asserted that the humanitarian action “reflects a critical but under-discussed component of internationalization that relates to refugees and at-risk migrants” (p. 2). So the flexibility and openness of European virtual universities offer plays a role in including migrant population. The example of this action in international education is the project University for Refugees, a multilingual portal created for validating credentials and easing access or continuity in higher education for population living in international refugee camps.

On the developmental side, the participants agreed that European virtual universities work to enhance national and international access to higher education. They declared that they have traditionally worked with students that need alternative-flexible pathways into or back to higher education. They are lifelong learners and population prevented from education because of the contextual situations or any other reason. The participants identified this work as aligned with SDG 4: *Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all*. In this regard, UNESCO (2015) released the *Paris Message*, making a call for international cooperation on online, open, and flexible education to promote north-south collaboration in initiatives related to access, quality, research, and development. Online education, according to UNESCO (2015), has the potential to offer large-scale, quality, and cost-effective pathways to higher education.

The fourth rationales proposed by Knight (2012) and Knight and de Wit (1995) are still present: political, economic, sociocultural, and academic. In the political rationale, the participants highlighted that European virtual universities interact with international governments and multilateral organizations to develop capacity building and enhance higher education access. For the economic rationale, the participants identified the development of tailor-made courses, research, and internships with industries, and strengthen human talent for global contexts. In the sociocultural rationale, they emphasized the provision of access to international and multicultural experiences through internationalization at home. For the academic rationale, they indicated the integration of international standards and cooperation in teaching and learning, research and extension. Finally, in the humanitarian rationale, the participants highlighted that European virtual universities create possibilities for students excluded from higher education to join or continue their education paths.

As a summary, the definition of IoHE for European virtual universities as transnational providers is characterized by a strong focus on internationalization at home and cooperation, partnerships and capacity building. The dominant rationale for engaging in

internationalization relates to SDG 4: *inclusive and equitable quality education and promotion of lifelong learning opportunities for all*, which comprehends developmental and humanitarian rationales. These rationales allow European virtual universities engaging in cooperation with governments, multilateral organizations, and other organizations to work globally to enhance access to higher education. Finally, they are open to students in need of flexible options to enroll and keep their pathway in higher education.

Dynamic Systems in IoHE for Virtual Universities

The second research question asked about the institutional approaches that European virtual universities use in their IoHE strategies. The approaches respond to purposes and are tied to the expected results (Zhou, 2016). This query on the approaches or how higher education institutions implement IoHE is embedded in the dynamic systems theory (DST) applied IoHE proposed by Zhou (2016). DTS in IoHE aims to identify the why, where, how, and what, to provide a snapshot of IoHE. The questions asked by DTS, according to Zhou (2016), are solved by identifying the purposes, programs, approaches, and results of implementing IoHE at any level: national, institutional, program. This study offers an inter-institutional view, which is a broad picture of how European virtual universities implement IoHE. According to Zhou (2016), DTS in IoHE helps to identify the nature and development of internationalization.

Through the coding process, there were identified eight main purposes for European virtual universities to engage in IoHE. The primary purpose, according to the participants and to the web pages of internationalization, is connected to the institutional mission, enhancing access to higher education regardless of the place. This purpose is connected to the calls made by UNESCO (2015) and the SDGs (UN, 2015) on the role that distance can play in offering education to students deprived from access. Looking at it from Gao's (2019) intuitional dimensions, in research, the purposes are to develop OERs and enhance research cooperation, impact and recognition worldwide. In the curricular dimension, the purpose is to adapt the educational offers to gain international relevance and pertinence of the educational offers. In the governance dimension, the purposes are to build and enhance capacities, and to make the institution sustainable. In the engagement dimension, the purposes are to cooperate with organizations working on enhancing access and to engage with industries. In the Faculty dimension, the purposes are to provide networking opportunities and supporting their internationalization initiatives. Finally, in the student's dimension, the purpose is to respond to the diversity of international profiles of students that need flexible and open opportunities to and back to higher education. This characterization of the purposes implies a difference to on-campus education, since the mission and student's profile have different aims.

The findings presented 16 major programs in which European virtual universities engage. Those programs are related to virtual mobility, virtual internships, lifelong learning short programs, education for population under humanitarian needs, cooperation for development, cooperation for research and OER, institutional capacity building, partnerships

with industries, among the major programs. These are specially connected to the mission, to the needs of the audience, and to opening options to physical mobility. This programs offer a view on the action to fulfill the developmental and humanitarian missions of Distance education and offer a panorama of the portfolio on options to physical mobility in IoHE. Programs such as teledandem, COILs, curriculum exchange, networked curricula, mobility windows, integrated virtual mobility, international blended educational design, among others, offer the possibility of enhancing internationalization and approach it from a comprehensive perspective. These alternative to physical mobility, according to EADTU (2019), “support enhancing the quality of the international learning experience in the framework of collaboration between institutions” (p. 42).

The participants identified three main approaches to internationalization in European virtual universities: strategic cooperation, partnerships and capacity building; and intercultural understanding. This two approaches are connected to the framework for internationalization developed by Hudzik (2015). The implication of this finding is the characterization of IoHE in European virtual universities as acting in the curricular and engagement dimensions. This is obvious, since the mobility pillar is absent, because of the delivery mode. These approaches to IoHE could be aligned with de Wit and Jones (2018), Hudzik (2015), Lewis (2017), who advocate for inclusive and comprehensive internationalization. These approaches are embedded in all the dimensions of the institutions and benefit a broad all the academic community, different to physical mobility that reaches a small number of students.

The perceived outcomes of IoHE in European virtual universities, by the participants, were the strengthening of the academic offers, the enhancement of quality, international recognition, financial sustainability, and fulfilling the intuitional mission. These outcomes of internationalization seem to strengthen the intuition and the programs. This is different to the internationalization focused in physical mobility that benefits about 1 to 2% of the academic community, as stated by de Wit and Jones (2018). The benefits circulate in a different way, the programs strengthen their international dimensions, and enhance their quality. The final beneficiaries are the students for whom physical mobility is not an option, and the institutions that consolidate in the international arena.

In conclusion, the four elements of DTS in IoHE presented the characterization of internationalization in IoHE. The characteristics highlight a focus on international cooperation and in internationalization at home. This focus allows the institution to fulfill their mission while consolidating in the international arena. It makes that European virtual universities work with governments and multilateral organization in international projects. It provides European virtual universities with funding and cuts the dependency on international students, exclusively. As a whole, the IoHE in European virtual universities could be identified with the perspectives of comprehensive internationalization (Hudzik, 2015) and inclusive internationalization (de Wit & Jones, 2018).

IoHE in European Virtual Universities: Challenges in Context

This section discusses the eight challenges presented in the findings and detailed in Annex 4. Challenge one and two were directly addressed by previous studies on challenges. The rest of the challenges are new in the list. Hence this section contextualizes each challenge with the existing literature.

This study did not find the challenges of competition and efficiency, as found by Siegle (2016), Stone (2019), and Tayar (2013). The participants highlighted that the pressure for competition and institutional efficiency in terms of revenue generation is not a dominant topic for European virtual universities. This is related to the fact that virtual open universities in Europe are public in most cases; there is a low number of them by country; and they are oriented toward different geographical areas, segregated according to their languages of teaching. In the case of the literature review, the topics of efficiency and competition is a vigorous discussion in the English-speaking countries, Australia and USA for the case of the mentioned authors. For Siegle (2016), Stone (2019), and Tayar (2013), online education is challenged by the growing competition in the online market, the need of developing entrepreneurial activities that generate resource diversification, and the need to discuss the high attrition rates.

Previous studies have highlighted the need for online education to address challenges related to enhancing access to higher education (Palvia et al., 2018; Streitwieser et al., 2019) and innovation in lifelong learning (Barker, 2020; Orr et al. 2018). Both the enhancement of access and innovation in lifelong learning are covered in challenge one. On one side, enhancing access is related to the need of models for online, open, flexible and online higher education accessible for all (Orr et al. 2018) and to SDG 4: *Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all*. On the other side, the challenge of online open education is to address the international growing demand of lifelong learning (Barker, 2020). European virtual universities work in creating connections among academia, industry, and lifelong learners for upskilling, reskilling and deep skilling human talent. The participants agreed that this challenge is the mission of distance education and the European universities. Hence, in this study it is not considered a challenge, since the institutions based their activities in meeting this mission.

Carvalho (2014) discussed the need of intercultural understanding (challenge two) in relation to the diversity of profiles, the teaching models, and the adaptation to online environments. This study identifies these needs in the curricular and faculty dimensions since it is the adaptation of all the elements of the curriculum and the competences of the faculty to deal with international, intercultural, and global contexts. This topic has been discussed by Lewis and O'Dowd (2016) from the teaching and internationalization perspective. This discussion is crucial for virtual universities since they need to adapt the educational offer to make it relevant to broader audiences. In the case of the challenge presented in this study, it involves curriculum and faculty as vial to develop intercultural understanding.

This study introduces six new challenges for IoHE in European virtual universities, not explicitly addressed by previous lists of challenges. They are:

- Strengthening online options for inter-institutional cooperation involving students (challenge 3).
- Strengthening collaborative OER and research (challenge 4).
- Cooperating and developing microcredentials (challenge 5).
- Enhancing cooperation with international multilateral organizations and governments (challenge 6).
- Gaining international recognition (challenge 7).
- Establishing models for the management of IoHE (challenge 8).

These challenges are not included in previous lists or studies that have developed challenges, despite being mentioned in scattered studies. It might be due that most studies speak about challenges for online education from a general perspective, and this study focuses on IoHE from an institutional level.

Strengthening online options for inter-institutional cooperation involving students, (challenge three) is one of the most extensively discussed (Buchem, I. et al., 2018). The development of the Collaborative Learning Hub for Virtual Mobility (Buchem, I. et al., 2018) and the manual of best practices (Bijnens, et al., 2006) consolidated virtual mobility as a practice. Nevertheless, inter-institutional collaboration involving students goes beyond. Academic staff develop teletandem, network curricula, among other practices that participants agree that sometimes are difficult to systematize and replicate. For that reason, they agree, it is in hands of the academic staff. This challenge claims for supporting academic staff initiatives to make them recognized and replicable for institutionalizing practices that go beyond virtual mobility as a replication of physical mobility.

Challenge four, strengthening collaborative OERs and research (challenge 4), has a new element, OERs, and a traditional one, research. The discussion on OERs is extensively consolidated in distance education since they distribute materials. UNESCO (2019), in its *Recommendation on Open Educational Resources (OER)*, recommended developing international actions to support the strengthening of OER and created a program to promote OER internationally. As declared by participant A, OERs are “a tool for innovation and development, and also for giving people more access to education”. McGreal (2017) posit that OER are the basis for achieving support SDG 4, which is connected with the mission of distance education.

The discussion on cooperation and development of microcredentials (challenge 5) has been developed by EADTU (2019). The European MOOC Consortium and EADTU launched the Common Microcredential Framework to make microcredentials portable, readable, and transferable. This framework allows to formalize short courses and make them transferable. Microcredentials, according to Cirlan and Loukkola (2020), will be the future of short courses in lifelong learning and specialized training. Gwin and Foggin (2020) posit that open

microcredentials and budgets can play a promising role in SDG 4 by enhancing access to education for the most remote areas, which is aligned with distance education mission.

The sixth challenge proposes enhancing cooperation with international multilateral organizations and governments. The International Finance Corporation (2020) highlighted the role of Coursera in this field. Coursera created lines of action for business, government, and campus. The actions with the governments allow distance education to offer them specialized short courses and to work in projects to enhance educational coverage. Streitwieser et al. (2019) highlight the role of the alliances among governments, multilateral organization, and NGOs to provide education for refugees and enhance educational access for population excluded from access to traditional higher education. The strength of these alliances consist in the possibility of fulfilling the mission of distance education and getting funding from the governments. There is little research on this challenge and how this kind of alliances can strengthen the IoHE strategies for European virtual universities.

Gaining international recognition is the seventh challenge. Gaskell and Mills (2014) addressed the problem of the negative perception of distance education credential. They found that the major challenges in this regard are quality assurance, learning outcomes, access to internet, and the perceptions of stakeholders. The authors highlight this panorama is changing because of the growing use of e-learning in education. The discussion on this challenge is in its peak due to the COVID-19 pandemic and the massive use of “remote learning” worldwide. Knight (2020) highlights the problem of international degree recognition for distance providers of higher education, which is another branch of the challenge related to the international legal recognition of the degrees. It is mostly because of the lacks of international frameworks for distance education (Knight, 2020).

Finally, establishing models for the management of IoHE is the eighth challenge. The finding showed the dispersion in the functions of the international offices and the radical difference with on-campus internationalization, where the offices take responsibility on international students. In this regard, Laitinen (2015) discussed how internationalization offices in Finland have been traditionally in charge of international students and how their role is changing to a strategic planning and policy support covering the three missions (research, education, and engagement). According to Soliman et al. (2019), the changing profile of the internationalization units has been scarcely discussed, and it is necessary to adopt a strategic organizational perspective to respond to the recent developments in IoHE.

As a summary, chapter five presented the analysis of the results using the theoretical framework to contextualize the findings with the related theory. The first section approached the role and definition of internationalization for European virtual universities with the theoretical framework of IoHE. The second section characterized the general institutional approach to internationalization by using dynamic systems theory, providing a picture of IoHE in European virtual universities. The third one discussed the eight challenges that European virtual universities face with the existing literature. Ensemble, these three sections put the findings in the research context, allowing to enhance the analysis.

Chapter 6: Conclusion

This last chapter recaps the study and points forward with suggestions for practitioners and future research. First, it summarizes the study with a retrospective of the purposes, theoretical framework, and research methodology. Then, it presents a review of the key information in the findings and analysis section. Next, it offers recommendations for practitioners who could find them useful for discussing their internationalization plans. Finally, the chapter presents the recommendations for future research.

All at once, chapter six recaps, summarizes, and looks forward in the study on the challenges of internationalization for European virtual universities. It allows concluding the practical implications of the results.

Retrospective

This study answered the research question: What are the challenges that European virtual universities face for the internationalization of online higher education? It is framed, on one side, within the forecast of UNESCO and ICDE (2015) of the growing demand for higher education, expected to rise from 99.4 million in 2000 to above 414 million in 2030. They highlighted the role that online, open and flexible higher education plays in providing quality, flexible, accessible, and cost-effective higher education. On the other side, it took the assumption that online education has consolidated worldwide as a fast-growing market in recent years (Research and Markets, 2019). Additionally, COVID-19 pandemic forced most of the universities worldwide to implement online education, which opened the possibility for further strengthening of the field.

Online education and virtual universities are complex concepts, since the terminology in online education is vast. Among the terms there are e-learning, web-based learning, internet based learning, remote learning, computer based learning etc. Online education is one of the most used terms in education (Joimvić et al., 2015). On the side of the institutions, virtual university refers to higher education operating online and offering distance education (Tiffin & Rajasingham, 1995). They come from the tradition of distance education (Taylor, 2001) and comprehend open, distance, virtual, online higher education institutions.

Because of the online environment of virtual universities, they are open to taking their educational offer anywhere. According to Knight (2012) virtual universities are transnational educational providers. For understanding internationalization, this study used the framework for institutional comprehensive internationalization proposed by Hudzik (2015) which classifies internationalization into three pillars: mobility, internationalization of the curriculum, and strategic partnerships. It also used Zhou's (2016), dynamics systems theory, which proposes to analyze internationalization by levels (global, national, institutional, or programmatic) and to identify the state of development (purposes, programs, approaches, and outcomes). This provides a snapshot of the development of internationalization at a specific level.

The study used a qualitative method and collected information from the internationalization web pages of the universities (eleven) and from interviews with staff involved in internationalization (five). The data collected was analyzed through thematic analysis, “a method for identifying, analyzing and reporting patterns (themes) within data” (Braun & Clarke, 2006, p. 79). At the highest level, the study used a pragmatic worldview that defines knowledge as contextual and changing through actions (Coghlan & Brydon-Miller, 2014). Pragmatism is an adequate worldview to deal with organizational practices since it looks at the ‘what’ and ‘how’ of social phenomena (Saunders et al., 2019).

The sample is composed of European distance, open, and virtual universities associated with the International Council for Open and Distance Education (ICDE) and the European Association of Distance Teaching Universities (EADTU). The final sample is a nonprobability purposive sample of eleven virtual universities (five interviewed and eleven websites), from a list of fifteen eligible ones that respond to the criteria: online distance institution, in Europe, and with operations in familiar languages to the researcher (English, Portuguese, Spanish).

Major Findings

The main findings of the thematic analysis were organized in five topics. First, European virtual universities identify developmental and humanitarian motivations as their mission. On one side, they identify SDG 4—*ensure inclusive and equitable quality education and promote lifelong learning opportunities for all*—as one of the major rationales to internationalize, since it is connected with the mission of open distance higher education. On the other side, they have also recognized the crucial role they can play in contexts of humanitarian crisis such as natural disasters, wars, refugee camps, etc., where they can offer pathways to higher education for students and academics.

Second, the online higher education global market, which is characterized by a low perception of competition and high cooperation among institutions. Most of the European virtual universities specialize by their national languages and, the ones limited by language, change to English to internationalize their offer. They usually have targeted regions for their operations, which has led to the development of cooperation with international governments, peer institutions, and on-campus institutions to strengthen and expand operations and to build capacities abroad.

Third, European virtual universities identify their internationalization of higher education with an international cooperation strategy. Participants agree that European universities cooperate instead of competing. At a European level, they mainly cooperate under umbrella organizations such as EADTU, EDEN, ICDE, among others. Internationally, they cooperate with governments and multilateral organizations for building capacities and expanding access to higher education. They also cooperate with on-campus institutions for building joint curriculum, joint classes, collaborative projects, and physical-virtual mobility.

Fourth, European virtual universities highlight the need to keep the leadership in online higher education to stand in the educational market. They face the lack of broad international frameworks for quality, acknowledgement, and recognition, since more of them are oriented towards on-campus education. This has led virtual universities to gain recognition by their leadership in lifelong learning approaches, development of open education resources, and flexible offers that adapt to students that otherwise would be prevented from accessing higher education.

Fifth, European virtual universities identify internationalization as having a key role in institutional capacity building. Internationalization, from a comprehensive perspective, happens in the curriculum, research, third mission, and at the institutional level. Since the traditional physical mobility dimension is almost absent, some internationalization units focus their efforts on building capacities. This is done through attracting international training opportunities for the staff, attracting international projects, developing strategic cooperation with governments, multilateral organizations, or industries for developing projects, research, and educational products.

From the dynamic systems theory perspective, internationalization at an institutional level comprises purposes, programs, approaches, and results (Zhou, 2016). The primary purposes and programs in virtual universities are the enhancement of access for lifelong learners and students prevented from higher education, internationalization of the curriculum, capacity building, international strategic cooperation, and development of OER and international research. The main approaches are related to intercultural understanding, capitalization of the staff relations, and external capacity building. The results are the strengthening of their educational programs, the enhancement of quality, and the sustainability of the institution.

Finally, the answer to the research question on the challenges for European virtual universities in internationalization identified eight major challenges:

1. Innovating in lifelong learning
2. Integrating intercultural understanding
3. Strengthening online options for inter-institutional cooperation involving Students
4. Strengthening collaborative OER and research
5. Cooperating and developing microcredentials
6. Enhancing cooperation with international multilateral organizations and governments
7. Enhancing international recognition
8. Establishing models for the strategic management of IoHE

These challenges were constructed with the problems identified by the interviews. The problems were grouped by institutional dimension: curriculum, engagement, faculty, governance, research, and students (Gao, 2019). The name of each challenge responds to the thematic coding (see annex 4)

Limitations of the Study

The findings of the study are restricted to five institutions, so it would be advisable to enhance it with more participants. This will allow to have a broader picture, nevertheless, it will imply a greater effort. On the other side, the difficulty can be reduced by focusing on one country that could offer a limited number of institutions.

The diversity of languages prevents access to most of the institutions. Despite the staff being able to provide information in English, the strategic and internationalization plans are usually not available in English. This constraint blocks the access to the specific information of the institutional operationalization of internationalization.

Also, the contact with internationalization staff was not easy because of the concerns of on data privacy. Being an external researcher with no previous contact with the institutions made that some contacted people expressed the concerns with them speaking on behalf of the institution. Also, because the internationalization activities are split with academics, internationalization staff preferred to recommend academic staff to take part in the interviews. This division of actions makes it difficult to have a complete picture of the institutional actions.

Despite the COVID-19 pandemic not producing major disruptions in the operations of European virtual universities, it has generated disorientation about the future. Some institutions were concerned about the cancellation of some international projects and not sure about what would be the immediate panorama. Most of them are sure they will play an important role, especially in reskilling, upskilling, and deep skilling in lifelong learning, but they are still not sure under which conditions.

Finally, some topics that appeared in the coding process were excluded due to the lack of connection with the major themes. These topics are: international approaches to general data protection regulation (GDPR), differences in organizational models of the institutions, quality in online education for international contexts, and entrepreneurship in online education. These topics could be related to internationalization of the institution, but also can represent independent discussions.

Recommendations for Practitioners

This study used an inter-institutional perspective, which implies the merger of different levels of development and implementation of internationalization. Some universities are already working on these recommendations and others have not implemented actions. From the diverse challenges and trends raised, the results support the arguments for strengthening at an institutional level and in the internationalization unit. They are the main stakeholders in internationalization of European virtual universities. Action must be also sought at a general level with internationalization networks and at a faculty level, but this research did not gather data for those levels.

First, internationalization plays a role at an institutional level and can contribute to strengthen the overall institutional strategy. At an institutional level, this study recommends:

1- Defining and specializing lines of international strategic cooperation: as found by the study, the most important pillars in internationalization for virtual universities is strategic cooperation, partnerships and capacity building. The major partners in this field are governments, international organizations, international academic and professional networks, on-campus universities, and peer institutions. Developing specialized cooperation, according to targeted groups, implies scanning the environments, reading the needs, and innovating in suitable solutions for groups of clients. This is a line of action that companies such as Coursera are taking now. For 2016, Coursera split their lines of actions into Coursera for Business, Coursera for Government, and Coursera for Campus (IFC, 2020). The specialization of the offer by broad segments allows developing specific solutions to the market and solve specific cooperation need in the organization (research, teaching, OER, capacity building, etc.).

This recommendation addresses challenge one and six. Specializing by lines of action and with key partners will allow institutions understanding the demand to innovate according to the needs. It implies investing in sustaining and keeping active relations, monitoring the needs of the contexts, and constantly creating tailor-made solutions.

2-Gaining insights from the market by monitoring international future skills to innovate in lifelong learning: the traditional work of European virtual universities in lifelong learning and its growing demand is already in the core of their activities. To enhance this function, in line with the recommendation of Universities UK International (2021), universities must research and disseminate information “on transnational online student characteristics and outcomes and case studies of successful transnational online higher education provision (emphasizing flexibility, employability and outcomes) (p. 11). It is necessary to engage in monitoring and tracking international markets to strengthen the diagnosis of the specific needs in lifelong learning. This recommendation acts on challenge one and two.

Beyond the skills needed in the industrialized labor markets, this information can be enhanced with the needs in rural areas and with lifelong learners from non-traditional backgrounds. This can lead to the development of projects for dissemination of scientific and technical improvements in fields like agriculture, fisheries, forestry, health, traditional textile, handicrafts industries, supply chains, among multiple other labor fields. This could be of special interest for international developmental and humanitarian actions.

3-Strengthening the power of international partnerships: the development of strategic international collaboration and innovation in lifelong learning requires the consolidation of strategic partnerships across multiple sectors. Most of the MOOCs have consolidated this strategy by partnering with worldwide recognized university names. Others, such as IBM Credentials or the World Association of Chefs, underpin their offer in industry partners. A third group, Domestika, Udemy, among others, underpin their offer in industry experts. On the side of European virtual universities, partnerships with industry, research, and

academic experts can outline a way to continue consolidating effective cooperation for better responding to the international educational needs.

So there are two kinds of strategic partnerships to solve challenges four, five, six, and seven. On one side, the strategic partnerships for development of curriculum, OER, microcredentials, international academics, and research that strengthen the educational offer or the internationalization at home. On the other side, online transnational education, the partnerships for the dissemination of the educational offer, governments, agencies, industries, on-campus universities, or peer institutions. The difficult point is defining the channels and responsible staff for constructing these partnerships, and how they can be supported to develop these activities effectively.

Second, since the internationalizations units tend to coordinate the internationalization strategies, the following three recommendations aim to strengthening the role of the international unit in the virtual universities:

1- Redefinition of the role of the internationalization unit: the internationalization units play diverse roles in European virtual universities: internationalization logistics and communications are the dominants. A few of the European virtual universities assign to the international unit the coordination and development of international projects or attraction of international opportunities. In most of the cases, the development of partnerships, cooperation, and capacity building are in the hands of the academic staff. There is the need of rethinking how international units can support international actions in the institution to solve challenge eight.

Internationalization units can play a role in attracting opportunities of professional development, training, and networking for staff. The international units can specialize to support specific strategic lines of cooperation. Also, these units can extend their activities to international industry partnerships, supporting the internationalization of third mission. Furthermore,

2- Exploring options to physical mobility: virtual mobility is a dominant topic because it represents a significant alternative to physical mobility. It has been concreted in the Open Virtual Mobility Learning Hub as an institutionalized practice for virtual and on-campus institutions. But multiple alternatives to physical mobility are emerging: collaborative online international projects (COILs), network curriculums, tele-tandems, mirror classes, global virtual teams, virtual internships, among others. It is necessary to capitalize on these different activities for structuring and establishing them as institutionalized practices to solve challenge three.

Most of these activities depend on academic staff initiatives and relations. So it is necessary to support, incentivize, systematize, and develop mechanisms for replicability of these initiatives. This can lead to strengthening institutional mechanisms for developing

virtual collaborations and to consolidate emerging online educational products that can strengthen internationalization of the curriculum and transnational activities.

3- Monitoring and data collection: Internationalization units can expand their actions and contribute to the institutional strategy by monitoring and reporting information on the external environment, international future skills, international legal recognition of the degrees, international demand and competition, etc. From the internal environment, it is also necessary to monitor and report, beyond the transnational educational facts and figures, the indicators related to internationalization of the curricula, research, and third mission. This recommendation addresses challenge seven.

The dispersion of the data regarding activities on transnational education hinders to have a holistic picture of the internationalization of the institution because at home indicators are lost, in most of the cases. Reporting this data can bring light on the areas where internationalization is needed.

Recommendations for Future Research

For future research, this study identifies three major pieces of advice: focusing on indicators to approach effectively the implementations of internationalization; using multiple case studies to highlight differences in policies; and developing further research in the emerging topics.

First, internationalization in higher education can be better approached from institutional indicators. Most of the institutions have implemented internationalization plans, or as a dimension in the strategic plan. For working with those plans, they have implemented performance and result indicators that are key to understanding how the institution interprets and implements internationalization. It could be difficult to access this information in some institutions, but others have them publicly available. This analysis could be in line with the broad discussion of indicators in internationalization.

Second, on the methodological side, it could be useful to implement multiple case studies for comparing developments and strategies. Those case studies could be at a programmatic, institutional, and country level. There are few studies comparing country approaches to internationalization, especially between uneven countries (Global North and Global South). Studies of this nature could be useful, taking the indicators perspective to characterize strategies, approaches, and policies being implemented from different perspectives.

Finally, there are multiple areas for further research in virtual universities. Internationalization of the curriculum, because of the component of international OER involved, has a potential for offering contributions to internationalization strategies. The blurring of the lines between online and on-campus, especially after the pandemic, is consolidating as a trend in which different models of cooperation are emerging. International transference of science for developmental purposes is a topic consolidated in distance

education and that will play an important role with the sustainable development agenda. Finally, the innovation in the educational offer for lifelong learning is another growing topic that is split between educational platforms and virtual universities.

It is my hope that this thesis contributes to enhance the discussion on internationalization of higher education, online education, and access to higher education. The COVID-19 pandemic will possibly change the perceptions and attitudes towards online education and its role, after the pandemic, will enhance and be crucial for offering access to higher education worldwide. This potential must be strengthened with an international perspective that makes high quality education relevant for multiple international contexts. More than a trend for attracting international students, internationalization represents the possibility of overcoming the parochialism of education, connecting with the cutting-edge knowledge, and reaching diverse populations around the world.

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Annex 1: Interview Protocol

Interview Protocol

*Erasmus Mundus Master in Research and Innovation in Higher Education—MARIHE
Danube University Krems - Tampere University*

General Information:

- Interviewer: Hugo Buitrago Carvajal
- Project: Challenges for the Internationalization of European Virtual Universities
- Number of questions: 14, approx.
- Estimated time: 50 Minutes

This interview is part of the requirement for the master degree in Research and Innovation in Higher Education—MaRIHE, supported by the Erasmus+ Scholarship Programme. This qualitative study interviews staff or academics involved in internationalization of virtual universities in Europe. Your answers will shed light on the characterization of the internationalization of European virtual universities, the challenges faced, and the strategies to overcome them. Your participation is greatly appreciated. Any information provided will remain confidential.

The interview is structured around a main research question, which is enhanced with four sub-questions. The sub-questions aim at specific purposes, as explained in table 1. Table 2 shows the sub-questions and the questions to be used for the interview:

Table 1: Aims structure of the interview.

Research Question	Sub-questions	Aims
What are the challenges that European virtual universities face for the internationalization of online higher education?	A-What are the roles of internationalization for European virtual universities?	Definition of internationalization
	B-What are the institutional approaches to internationalization?	Institutional approaches to internationalization
	C-What are the key challenges in internationalization for European virtual universities?	Identification of problems
	D- What is the desirable future of the key challenges in internationalization for European virtual universities?	Exploration of challenges and solutions

Table 2: Interview questionnaire.

Sub-questions	Interview Questions
A. What is internationalization and its role for a European virtual university?	1. How does your institution interpret internationalization?
	2. What are the rationales for the institution to engage in internationalization?
	3. What are the benefits that internationalization brings to the institution?
B. What is the institutional approach to internationalization?	4. How is internationalization embedded in the organizational chart?
	5. How is the internationalization strategy/policy created? Who participates in the process?
	6. What current goals does the institution have for internationalization?
	7. What are the internationalization programs and activities developed?
	8. What does the institution consider outcomes of internationalization?
C. What are the key challenges in internationalization for European virtual universities?	9. What are the national (country where the university operates) constraints (legal, economic, cultural, etc.) for internationalization?
	10. What are the international (where the institution has operations) constraints for internationalization?
	11. What are the key challenges (three most important) that this institution is addressing?
D. What is the desirable future of the key challenges in internationalization for European virtual universities?	12. Why does your institution want to solve this—mentioned challenge?
	13. What are the barriers for your institution to solve—mentioned challenge?
	14. How might your institution solve—mentioned challenge? What type of support (and from whom) do you need to solve the challenge?

The answers are expected to come from your experience and vision of the field, more than in institutional facts, for institutional facts, the researcher also explores the webpage of the international section and the strategic plan of the university, where the programs, facts and figures are included. In section D, exploration on challenges and solutions, the questions will be based on the challenges mentioned in section C.

Thank you very much for your kind participation and for contributing your knowledge to this project.

Annex 2: Research Participation, Information, and Consent Form

Research Participation, Information, & Consent Form

*Erasmus Mundus Master in Research and Innovation in Higher Education—MARIHE
Danube University Krems - Tampere university*

You have been invited to participate in the research project *The Internationalization of European Virtual Universities: Mapping the Challenges*, a requirement for the Master degree in Research and Innovation in Higher Education—MaRIHE, supported by the Erasmus+ Scholarship Programme. The project is conducted by Hugo Alexander Buitrago Carvajal, supervised by XXXX, and approved by Danube University Krems. The participants to this research are academics and staff (a) involved in internationalization (b), in online education (c), who agree to participate in an online interview (d), and to be audio recorded (e). The terms of the participation are provided in this document, which stands for the consent to freely participate.

Purpose of the study: This research aims to offer a characterization of the key challenges that European virtual universities face for strengthening their internationalization dimension in the next years. The findings of this research will contribute to strengthening international presence of distance/online virtual universities by informing the management, strategic planning, and policy making for their internationalization.

Procedures: a meeting with the researcher will be scheduled according to your preferred date and time. The interview should last no longer than 50 minutes and you will receive the questions ahead of time. The interview discusses the institutional view, challenges and possible solutions in internationalization and will be conducted via Microsoft Teams / Zoom. The audio, and any kind of personal information, will be saved in a password protected local file, will be transcribed through One Drive voice typing tool, and eliminated after one year. In the end, you will receive a report of the complete research for you to review it, and contribute further points of view, in case you have.

Benefits: the research outcome will be a map of challenges and ideal solutions to address the issues of internationalization of European virtual universities. The results will contribute to discuss the topic of internationalization of online education, a resource for international offices, and will contribute to enhance the international activities of virtual universities. The participants will receive the final report.

Risks: The risk in participating in this study is the possible breach of confidentiality. To avoid it, the researcher will guarantee the confidentiality of the archives by assigning identification codes to the files instead of the names of the participant and will password-protect the files. Also, the researcher will avoid interview fatigue by not exceeding 50 minutes of interview.

Privacy: Any information you provide will remain confidential and your name, address, email, or any identifiable information is not going to be included in the body of the research (unless

you agree to appear in the acknowledgements section). Data will be kept in a local storage of the researcher in his place of residence. The data may only be disclosed by a legal requirement or by a requirement of Danube University Krems, for verification purposes.

Participation and withdrawal: your participation is voluntary and you may withdraw and discontinue your participation at any time, without any repercussion. Also, you can ask for any recording or transcript of your data, to correct, withdraw, and object the processing of the data.

Compensation: This research does not contemplate any kind of monetary compensation.

Researcher contact information: you may ask any question or doubt you have to the researcher via email, telephone call, or Whatsapp. The researcher contact is Hugo Buitrago, email: XXX; and telephone and Whatsapp number XXX. The supervisor of this research is XXX, E-mail: XXX, from the Danube University Krems, Austria (Department for Continuing Education Research and Educational Technologies, Dr.-Karl-Dorrek-Straße 30, 3500 Krems, Email: XXX, Tel: XXX. This consent form must be signed and returned electronically to the researcher.

Signature of the researcher:

I have explained the purposes, implications, and outcomes of the research. I am available for any question and any requirement of the participant:

Name>

Signature:

Date:

Signature of the participant:

I have read the terms described above and been given the opportunity to ask questions: I understand that my participation is voluntary and I can withdraw at any time.

I agree to participate.

I agree that the interview will be recorded and transcribed.

Name of the participant:

Signature:

Date:

Annex 3: Recruitment Script

Recruitment Script

*Erasmus Mundus Master in Research and Innovation in Higher Education—MARIHE
Danube University Krems - Tampere university*

Subject: Study on internationalization

Dear Sir/Ms,

My name is Hugo Buitrago and I am currently enrolled in the Erasmus Mundus Master Program [Research and Innovation in Higher Education—MaRIHE](#) (Danube University Krems, Austria, and Tampere University, Finland). I am conducting the study *Challenges for the Internationalization of European Virtual Universities*, as the requirement for the master's degree.

The aim of this study is to create a map of the challenges that European virtual universities face for the internationalization of their activities and to explore the possible solutions to enhance their activities. The study is a qualitative inquiry composed of 14 open ended questions designed to explore the particularities of internationalization of European virtual universities, its approach, problems, challenges, and strategies. The study consults staff and academics involved in internationalization activities and I would like to interview you for this project. The study will conduct one online interview of 50 minutes, maximum, and the schedule will be subject to your availability.

I hope you are interested in contributing to my research. If you accept, I will provide you with a consent form and with an interview protocol for you to have the questions in advance. Also, after conducting the study, you will be granted access to the final report.

Thank you in advance and I look forward to hearing from you.

Sincerely.

Annex 4: Challenge Map

	Challenge	Dimension	Problems	Vision
1	Innovating in lifelong learning	Curriculum	Growing unmet demand in lifelong learning. Few flexible pathways for lifelong learners. Industries needing reskilling, upskilling and deep skilling staff.	Development of flexible curriculums and pathways for lifelong learners, at an international level, in connection with different industries demanding flexible education.
2	Integrating intercultural understanding	Curriculum Faculty	Difference in expectations. Impossibility to reach local languages. Difference in power relations in class. Different assessment methods. Need of adapting the curricula to international demands. Need of developing intercultural competences in the academic staff.	Development of internationalized curricula mediating between Eurocentric and local higher education for gaining contextualization and international pertinence.
3	Strengthening online options for inter-institutional cooperation involving students	Students	Need of further consolidate virtual mobility. Difficulty in systematizing merging virtual teaching cooperation. Emerging virtual teaching cooperation. Asymmetric cooperation among institutions.	Facilitate international cooperation to solve the differences in costs, to create alternatives, to reduce asymmetries in cooperation.
4	Strengthening collaborative OER and research	Faculty Research	Growing costs of materials. Restrictions of licenses. Need of cooperating with research centers around the world to increase the impact of research.	To build capacities, develop policies, and design materials, sustainable models, and promoting international cooperation of academic staff in OER and collaborative research.
5	Cooperating and developing microcredentials	Engagement	Messy proliferation of microcredentials. Impossibility of readability and transferability.	Creation of mutual understanding for online educational offers, transferability, and readability mechanisms.
6	Enhancing cooperation with international	Engagement	Needs of governments to expand access to higher education.	Provision of the expertise in distance and online education.

	multilateral organizations and governments		Need of multilateral organizations to work on access to education. Low connectivity and infrastructure to internet for education in some regions.	Advocacy for connectivity with international governments and companies to build capacities.
7	Enhancing international recognition	Governance	Lack of international frameworks. Lack of international acknowledgment of distance and online degrees Different international terminology for similar concepts.	International legal and academic recognition and reputation for international open and online education.
8	Establishing models for the strategic management of IoHE	Governance	International offices centered in mobility and agreements. Scarce participation of the international office in the overall internationalization strategy.	Internationalization units that have portfolios and procedures for international cooperation with different kind of institutions, at different levels.

Annex 5: Coding Framework

The coding framework analyzed five transcriptions of interviews and eleven websites. This information come from eleven European virtual universities. I coded the dataset with a first round of open coding (column C), obtaining 249 codes. In a second stage, I organized the codes in 29 groups (column B), this step is axial coding. In the third stage, I organized the group around five themes (column A), selective coding. As a whole, I presented the results in the first sub-section of chapter four: findings, under the subtitle of The IoHE in European Virtual Universities.

Because of the extension of the file, I uploaded the coding framework to the open-access repository Zenodo. The coding framework can be consulted in this link: <https://doi.org/10.5281/zenodo.4568580>