

CIHE
Perspectives
No. 15

Internationalization of Technical and Technological Institutions of Higher Education in the Caribbean

A report by the Technological Institute of the Americas (ITLA) and the Center for International Higher Education, Boston College (CIHE)

**Hans de Wit, Miguel J. Escala, and
Gloria Sánchez Valverde, Editors**

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CIHE Perspectives

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FOREWORD

It is a great pleasure to present this 15th edition of CIHE Perspectives. In the pages that follow we offer a report on the internationalization of technical and technological institutions of higher education in the Caribbean, a joint project of the Instituto Tecnológico de las Americas (ITLA) in the Dominican Republic and the Boston College Center for International Higher Education (CIHE). This report is unique in that there is relatively little research on the internationalization of higher education in the Caribbean; the same is true regarding the internationalization of technical and technological institutions of higher education. Therefore this report's combined focus on the Caribbean and technical and technological institutions can be seen as a first effort to identify the specific dimensions, challenges, and opportunities for relevant institutions in a region influenced by a very diverse landscape of education systems reflecting the past and present influence of colonial actors. Indeed, British, Dutch, French, Spanish, and more recently American systems all form part of the background for the current "state of play."

The report includes an introductory section, providing the context of internationalization in higher education, the Caribbean region, and its technical and technological institutions, followed by case studies from Haiti, the Dominican Republic, Colombia, Costa Rica, and Cuba. The report ends with conclusions and recommendations, also taking into account a recent regional survey of technical and technological institutions conducted by the authors, which adds input from St. Kitts, Saint Lucia, and Puerto Rico.

In my capacity as director of CIHE I want to thank my co-editors Miguel J. Escala and Gloria Sánchez Valverde for their excellent cooperation in completing this report. Gloria Sánchez Valverde has been central in the organization of the survey and

the follow-up workshop held for participating institutions at ITLA's campus in Santo Domingo from May 16-18, 2019. She was also instrumental in the collation of this report and the presentation of its findings at the Conference of the Americas on International Education (CAIE) in Bogota, Colombia on October 24, 2019. Miguel J. Escala has been my counterpart throughout the project and it has been a great pleasure and learning experience for me to understand and study the regional context and the specific dimensions of technical and technological institutions alongside him.

I want to thank in particular José Armando Tavaréz, Rector of the Instituto Tecnológico de Las Américas, for this opportunity and his great commitment to the study. His inspirational leadership as rector of ITLA – as well as of internationalization efforts in the region more broadly – is exemplary. I also want to thank the authors of the case studies, CIHE doctoral candidate Lisa Unangst for her editing work on this edition, and Salina Kopellas at CIHE for the design.

The preface by the rector of ITLA and the bios of the authors are in Spanish. There will also be a completely Spanish version of this issue of CIHE Perspectives 15. This reflects the cooperation between ITLA and CIHE in this project.

Hans de Wit, Director

Center for International Higher Education

PREFACE

La internacionalización de las instituciones de educación superior técnicas y tecnológicas es un tema que va ganando terreno en los ámbitos académicos de investigación. En un mundo globalizado, la internacionalización de nuestras academias adquiere un perfil de gran relevancia. Se hace necesario que todas las instituciones de educación superior busquen fórmulas novedosas que hagan posibles aprovechar las ventajas de la mundialización de todos los servicios, incluyendo el educativo.

Esta realidad supone una preocupación para los académicos e investigadores de todos los tiempos. Los análisis científicos respecto al tema deben estar dirigidos a estudiar las diferentes dimensiones del fenómeno. Un caso particular es el de cómo debemos abordar el desafío de la internacionalización de las instituciones que ofrecen títulos superiores de duración corta, de dos años promedio, y de educación tecnológica. En este sentido podemos afirmar que necesitamos más y mejores investigaciones al respecto.

El Instituto Tecnológico de las Américas (ITLA) ha identificado la necesidad de reflexionar desde una perspectiva académica sobre los procesos que se han desarrollado en los últimos años en las universidades e instituciones de educación superior que se especializan en la enseñanza tecnológica y técnica. Específicamente es de interés los procesos de internacionalización que se ejecutan en dichas organizaciones.

Se está experimentando un creciente interés en la educación técnica y tecnológica superior por diversos actores del ámbito internacional. Diversos organismos como el Banco Mundial y el Banco Interamericano de Desarrollo han publicado diversos informes donde se muestran evidencias estadísticas y económicas sobre el alto retorno social que suponen para el individuo que las cursan las

carreras técnicas y tecnológicas, así como las vinculadas a diversas áreas de las ingenierías.

En el informe del banco mundial titulado *Momento Decisivo*, se ofrece el dato que el retorno social de estudiar una carrera en la rama de las ingenierías, tecnología o técnicas superiores supera en más de un cien por ciento a las carreras tradicionales, sobretudo en las ciencias sociales. Esto no quiere decir que nuestros países no necesiten filósofos y sociólogos. Lo que pone en evidencia es la escasez de profesionales técnicos en los diversos países del planeta.

En un mundo digital y altamente tecnológico, se necesitan más y mejores profesionales en dichas áreas. La realidad es que la oferta no satisface la demanda. Las brechas entre las vacantes en puestos técnicos y las personas con las habilidades para suplirlas son enormes. Esto está provocando un sentimiento de urgencia en los hacedores de políticas públicas que definen proyectos y programas que intenten solucionar dicha problemática.

Es por eso que el ITLA junto con el Centro de Educación Superior Internacional (CIHE) del Boston College (BC) han realizado la presente investigación y ponen la misma a disposición de la comunidad académica y de todos aquellos a los que les resulten útiles dichas informaciones. Poco se ha escrito al respecto. Es por eso que debemos valorar en su justa dimensión el extraordinario aporte que hacemos con el presente documento.

La investigación “Internacionalización de las Instituciones Técnicas y Tecnológicas en el Caribe” hace un análisis interesante e innovador sobre las estrategias y acciones de internacionalización de diversas instituciones de educación superior que se localizan en República Dominicana, Haití, Colombia, Costa Rica, Cuba, St. Lucia, St. Kitts y Puerto Rico. Al leer los distintos capítulos de la

investigación nos podemos dar cuenta de la gran diversidad de nuestra región caribeña y que se refleja en sus instituciones académicas. Las diversas subculturas e idiomas provocan un interesante y amplio espectro de posibilidades y estrategias de internacionalización. Se podría concluir que cada caso es único. No hay forma de referirnos a una institución sobre la base de un patrón homogéneo. En eso precisamente radica la riqueza de los resultados de dicha investigación.

Los prestigiosos investigadores Hans de Wit y Miguel Escala han hecho un interesante documento que sintetiza y analiza los aportes que han ofrecido todas las academias localizadas en los diferentes países del gran Caribe. Su vasta experiencia y agudo análisis científico nos permiten contar con un documento de alto rigor académico y que hace extraordinario aporte al acervo actual de publicaciones sobre el gran tema actual: la internacionalización de la educación superior.

La alianza Instituto Tecnológico de las Américas (ITLA) y CIHE de Boston College ha producido un gran resultado que se constituye en una de las investigaciones de mayor impacto de los últimos tiempos. Espero que todos puedan valorarla en su justa dimensión y continuar el debate necesario sobre la importación de la educación técnica y tecnológica en nuestra región y lo que la internacionalización puede hacer o hace al respecto.

José Armando Tavarez,
Rector of the Instituto Tecnológico de Las
Américas

Internationalization of Higher Education in Technical and Technological Institutions in the Caribbean, an Introduction

Hans de Wit

Introduction

Internationalization as a concept and strategic agenda is a relatively new but broad and varied phenomenon, driven by a dynamic combination of political, economic, socio-cultural, and academic rationales and stakeholders. Regional, national, and institutional contexts are defining factors for the why, what, and how of international strategies. There is not one single model that drives internationalization. This implies that in the Caribbean region and in technical and technological institutions, internationalization is driven by different rationales and will have different objectives, approaches, and structures than in other types of higher education institutions and in other parts of the world. This introductory chapter provides an overview of key factors, trends, and conceptual dimensions of internationalization in higher education, of relevance for the analysis of developments, challenges, opportunities, and threats for internationalization of technical and technological institutions in the Caribbean.

Over the past decades, most scholarly and public attention with respect to internationalization in higher education has focused on the Western world. As Upenyu and Ress (2018) note: “very little research has aimed to understand and conceptualise internationalisation efforts in the context of the historical particularities of the postcolonial condition” (p. 4). The concept of internationalization of higher education has itself become globalized (Jones, E. & de Wit, H., 2012, 2014; de Wit, H., Gacel-Ávila, J. & Jones, E., 2017). Studying internationalization of technical and technological institutions in the Caribbean is relevant in addressing the question: are insti-

tutions, countries, and regions simply mimicking the priorities of Anglo-Western forms of internationalization, or are distinctive forms of the concept emerging which better reflect local needs and priorities? Internationalization should no longer be considered in terms of a westernized, largely Anglo-Saxon, and predominantly English-speaking paradigm. It is important “to learn from other non-western national and cultural contexts - to understand the full extent of internationalization as a phenomenon and what we can learn from each other in order to benefit students, employers and nations” (Jones & de Wit, 2012, p.50).

What are the key factors in international higher education that are impacted by and themselves impact the phenomenon of internationalization? How do we understand its evolution as a concept? What national policies are developed to enhance the international competitiveness of higher education in low- and middle-income countries, a group to which the countries in the Caribbean belong? And what are the implications for institutional strategies for internationalization? This introduction explores those questions and concludes with some key factors to keep in mind in developing internationalization strategies for technical and technological institutions in the region.

Historical Dimensions of Internationalization¹

One can argue that higher education by its nature has always been international. Altbach (1998) refers to the university as an institution that is global by nature and through history. Kerr (1994) states that universities are essentially international, but at the

¹ This section builds on de Wit et al, 2015 and Hunter and de Wit, 2016.

same time acknowledges that “they have been living, increasingly, in a world of nation-states that have designs on them” (p. 6). As de Wit and Merckx (2012, p. 43, see also de Wit, 2002, p. 3-18) remark, though, references to the global nature of universities ignore the fact that universities mostly originated in the 18th and 19th centuries and had clearly national orientations. Neave (1997) and Scott (1998) also refer to the myth of the international university.

The international orientation of universities has changed dramatically over the centuries and takes substantially different and more complex forms and approaches today. What now is called “internationalization of higher education” as a concept and strategy is a recent phenomenon that has emerged over the last 30 years. Its roots reach back over centuries, while it has been interrupted by more national orientations.

Many publications on the internationalization of higher education refer back to the Middle Ages and the Renaissance period, when, in addition to religious pilgrims, university students and professors were a familiar sight on the roads of Europe (de Ridder-Symoens, 1992). While limited and scattered in comparison to the European Higher Education Area we know today, we can still speak of a medieval “European space” defined by a common religion, and both a shared language (Latin) and set of academic practices (Neave, 1997, p. 6). The resemblance may only be superficial, but we can still see similarities to the promotion of mobility and the broadening of experience, common qualification structures, and the gradual growth of English as the common academic language visible today (de Wit, 2002, p. 6).

Most universities originated in the 18th and 19th centuries with a distinct national orientation and function. In many cases, there was a process of de-Europeanization. Mobility was rarely encouraged or was even prohibited, and Latin as the universal language of instruction gave way to national languages. This transition was gradual. Hamerstein (1996, p. 624) mentions the gradual prohibition of

study abroad in many countries; the displacement of Latin by vernacular languages; and the replacement of the academic pilgrims by the “grand tour” which focused more on the cultural rather than on the academic experience. As de Wit (2002, p. 7) observes, universities became institutions that served the professional needs and ideological demands of the new nations in Europe. Scott (1998) notes that “paradoxically perhaps, before it became an international institution the university had first to become a national institution – just as internationalization presupposes the existence of nation states” (p. 123).

In this more national period of higher education, international projects were not completely absent. As de Wit (2002, p. 7) observes, three international aspects can be identified: export of higher education systems, dissemination of research, and individual mobility of students and scholars (see also de Wit and Merckx, 2012, p. 44-47). For the Caribbean region, these three aspects have been essential. The Caribbean region has a diverse import of higher education systems: British, Dutch, French, Spanish, and more recently American. Many of each country’s elite have been trained in the higher education systems of these colonial powers, and still one can observe an outward mobility trend to these colonial actors as well as a dependence on their funding, teaching and learning, structures and cultures, and quality assurance. These tendencies have limited the development of an independent research culture and capacity. As a consequence, this phenomenon has also limited inner-regional cooperation and growth and ongoing dependence in different colonial directions. Europe and North America have been dominant in influencing and controlling higher education development in the Caribbean region.

Global Trends in Higher Education Affecting Internationalization Policies²

Besides the historical evolution of the international dimensions as described above, internationalization

²This section builds on Altbach et al., 2017 and de Wit and Altbach, 2018

must also be seen in the context of the changing role and position of higher education in the world, as internationalization can only be seen in its broader context. The main misconception (or criticism) about internationalization is that it is too much a goal in itself instead of a means to an end. Internationalization is neither more nor less than a way to enhance the quality of education and research and thereby service to society.

Rapid changes are taking place in international higher education, which have only increased in range and complexity over the past decade. Global competition for talent, growing complexity in cross-border activity, branch campuses, and the creation of global professionals and citizens are issues that are becoming essential parts of the language of university leaders in all parts of the world. Notions of importing and exporting countries are being turned upside down as students choose study destinations in countries that were once seen as merely sending students to the “West” to study. Global mobility flows are increasingly complex, offering new opportunities for those able and willing to access them. Non-western countries are emerging as key players and beginning to challenge the dominance of Western discourse on internationalization. There are increasing expectations of employers for cross-culturally capable graduates, ideally with international experience, to meet these demands (Jones & de Wit, 2014).

Key changes in higher education globally are its massification, the global knowledge economy, and the emphasis on reputation and rankings.

Massification

Higher education has experienced dramatic expansion in the past half-century. Massification has changed the reality of postsecondary education everywhere. At the same time, the global knowledge economy has made higher education and research a key socio-political player and the international dimensions of universities more important than ever. What are the major trends in higher education worldwide? In short, massification on the one hand, the global knowledge economy on the other hand,

and evolving notions of how they relate to internationalization. We also focus on autonomy and academic freedom, the role of reputation, rankings and excellence, and the changing political climate as factors influencing the internationalization of higher education.

During the last five decades, the higher education landscape has changed dramatically. Once the privilege of an elite social class, gross enrollment ratios (GER) in postsecondary education have mushroomed to more than 50% in many countries. There are more than 200 million students studying globally at an untold number of institutions focusing on every specialization possible. In much of the world, massification is a key phenomenon. Emerging economies, including China, India, and Latin America and the Caribbean (with gross enrollment ratios of 37%, 22%, and 35%, respectively), are expanding their enrollment rates toward 50% or more as is common in the developed world. Even within countries in Africa, still at the elite phase of less than 15% of GER, the demand for higher education as a result of improved primary and secondary education and an emerging middle-class is rapidly expanding. Latin America is currently somewhere between 40 and 45% of GER, with great variations between countries, and the Caribbean sees (on average) a still lower GER, but also with great variations.

On the other side, one can observe a saturation in demand in countries which have already moved far beyond the 50% GER characteristic of universal enrollment, such as the United States, the United Kingdom, continental Europe, Canada, Australia, South Korea, and Japan. In those places, for demographic and other reasons, the supply of tertiary places in particular in Science, Technology, Engineering and Math (STEM) fields is starting to become higher than demand.

The relationship between massification and internationalization is manifest. International students and scholars are needed to fill the demand for graduates in particular fields (especially STEM). Such students are mainly coming from developing and emerging economies, where there is still an ongoing demand for quality higher education, result-

ing in brain drain and related decrease in research and top talent capacity in these countries. In the current anti-immigration climate, tensions are increasing between the need for imported highly skilled talent and the desire to reduce the influx of immigrants.

The Global Knowledge Economy

The other key element in higher education development and internationalization in the past half-century has been the impact of the global knowledge economy—the increasingly technology and science-based globalized set of economic relations that requires high levels of knowledge, skill, and sophisticated international relations. Research-intensive universities play a particularly important part in the global knowledge economy. Not only do they educate top talent but they are also the main producers of basic research in most countries. Research universities are among the main internationally-linked institutions. They have strong links with similar institutions around the globe, host international faculty and students, and increasingly function in the global language of science and scholarship—English. Caribbean institutions of higher education, even the public ones referred to as research universities, currently play a marginal role in the global knowledge economy.

Reputation and Rankings

National, regional, and global university rankings are driving the agendas of institutional leaders and national governments more than ever. Many governments, in particular in the North but increasingly also in the South, create excellence programs and investment schemes to become more globally competitive, develop world-class universities, and move higher in the rankings. While on the one hand there is a call for increased access and equity, governments and institutions of higher education are striving for more excellence in research, teaching, and learning.

Salmi (2009) summarizes what separates elite research universities from the rest as a high concentration of talents; abundant resources; and favorable and autonomous governance. Excellence initiatives

in, for instance, Germany, France, Japan, Russia, China, and other countries have strengthened national system differentiation by separating a new elite sector of world-class universities from other more nationally and regionally-oriented research universities.

Rankings—national, regional, global, institutional, by discipline and across an increasing number of other dimensions—have come to play an ever more important role in higher education. Global ranking has remade global higher education in three ways, according to Marginson (2017). First, *competition*, the idea of higher education as a competitive market of universities and countries. Second, *hierarchy*, as a core element of the system of valuation. Third, *performance*, a performance economy driving “an often-frenetic culture of continuous improvement in each institution.” Yudkevich, Altbach, and Rumbley (2016) speak of the “Global Academic Rankings Game,” in which only a small portion of the higher education sector competes. This minority of institutions gets all the attention and forces governments and institutions to “compete” without acknowledging the need for differentiation. As Altbach and Hazelkorn (2017) state: “prestige and reputation have become dominant drivers rather than pursuance of quality and student achievement, intensifying social stratification and reputational differentiation” (p. 10).

The relationship between excellence initiatives, rankings, and internationalization is clear. They reflect the globally competitive nature of higher education at elite research universities, they stimulate competition for international students and scholars, and they are driven by quantitative international indicators: number of international students, number of international staff, and number of international co-authors of publications. This competition drives national governments and institutions to invest in more global research, to use English as language of research and education, and to focus on international recruitment strategies.

Higher education in the Caribbean is not a factor in this global rankings game, but its lack of presence confirms and increases its marginal role in international higher education, and by that also its

internationalization.

Implications for Internationalization

The emphasis in internationalization has traditionally been on exchange and co-operation and there continues to be a rhetoric around the need to understand different cultures and their languages. Nevertheless, a gradual but increasingly visible shift towards a more competitive internationalization has been apparent since the second half of the 1990s. Van der Wende (2001) calls this a shift in paradigm from cooperation to competition. De Wit et al. (2017, p. 232) speak of the globalization of internationalization, and the choice for higher education in the emerging and developing world between a more competitive direction of internationalization or a more socially responsible approach.

The massification of higher education and the increasing importance of higher education and research for the global knowledge economy have resulted in the increasing importance of its internationalization. There are now close to five million students studying abroad, double the amount ten years ago, and predictions indicate a further increase to at least eight million in the next decade. There is increasing global competition for international students taking place. The classic divide between those countries which are sending (mainly the emerging and developing countries) and those which are receiving (mainly the developed and in particular English-speaking countries plus Germany and France) is shifting, and the current political climate will accelerate that process in the years to come. The international student industry has become a more global and competitive market.

There is also increasing competition for academic staff. The presence of international faculty within higher education institutions and systems around the world is an important dimension of higher education in the global knowledge economy. Yet the scope and nature of international mobility of faculty is a rather unknown and understudied phenomenon. There is a lack of consensus with respect to what defines an “international” academic, and there are different profiles for the institutions recruiting them: from the elite research universities

recruiting the most sought-after academics on the one side of the spectrum to institutions or systems facing local shortages of faculty and recruiting regional and international faculty to meet basic operational needs (Yudkevich, Altbach and Rumbley, 2017).

There is growing demand and recognition for “internationalization at home,” including internationalization of the curriculum, teaching and learning, learning outcomes, and global citizenship development. The reality is that only a very small percentage of scholars and students have the opportunity or even the desire to go abroad for a full degree or short term experience, ranging from 1-5% in most countries in the world to 20-30% in countries like Germany and The Netherlands. This circumstance implies that one has to internationalize at home, to be able to equip all students for the knowledge society we now live in.

The internationalization of research is another dimension of this phenomenon. Like the case of international faculty, the internationalization of graduate education and research, including international co-authorship and other international research benchmarks, is receiving limited attention, with the exception of import for international rankings. Research, however, is becoming an increasingly complex enterprise and requires more international collaboration and competition than ever. Top academic talent is a scarce commodity and processes around issues such as patents and knowledge transfer require more support than in the past. Long-term planning for research infrastructure, increased research capacity, development of new research platforms, and better co-ordination between research units all require a more strategic focus on capacity development and international research policies and systems. The growth in international research funding, patents, publications, and citations requires the development of research teams of a global nature. Bibliometric analysis yields evidence of increasing scientific collaboration within the international scientific community. Talented doctoral students and scholars are the international human capital on which research and development and innovation build. The dominance of English as

the lingua franca in research is pervasive and has also expanded to teaching and learning. This, together with the increasing attention to international rankings and the role of research in them, explains why in recent years more attention is given to the development of national and institutional strategies for the internationalization of research.

Other elements of internationalization are international branding, reputation, and rankings. The agenda of internationalization is increasingly driven by the rankings and the quantitative international indicators they rely on: number of international students, number of international faculty, and number of internationally co-authored publications. These indicators ignore the relevance of internationalization at home and of teaching and learning.

According to de Wit, Hunter, Egon-Polak and Howard (2015), internationalization needs to evolve into a more comprehensive, more intentional, and less elitist (for all students and staff) process, less focused on mobility and less economically driven, with the goal of enhancing the quality of education and research and making a meaningful contribution to society.

Internationalization, an Evolving Concept

Although as described above higher education has always had international dimensions, internationalization as a concept and strategic factor is a rather young phenomenon, resulting from the fact that higher education at the system and institutional levels needed to react to and act in a more global knowledge society and economy.

A gradual move of internationalization from margin to core has taken place from the 1980s onwards. This may be seen as a consequence of developments such as the increasing importance of research and education for economic development (the knowledge economy and society), the rapidly growing demand for higher education in the world, the end of the Cold War, and regional cooperation in higher education, the latter particularly in Europe.

In the 1980s and 1990s, the main focus was on mobility. This came as a result of the unmet demand for higher education, which resulted in a drastic in-

crease in international degree mobility of students, mainly from the developing world to the developed world; the growth of short term credit mobility of students, in particular in Europe as a result of Erasmus; an increase in short term faculty mobility, primarily for research; and a gradual growth in franchise operations, branch campuses, and other forms of transnational education.

Abroad and at Home

This focus on what Jane Knight (2012) refers to as “Internationalization Abroad” is still prevalent. But by the turn of the century, there also emerged a need for higher education institutions to respond to a compelling call for globally competent citizens and professionals. This imperative requires paying attention to the far larger group of non-mobile students and faculty, and to internationalization of the curriculum and teaching and learning. As such, the notions of “Internationalization at Home” and “Internationalization of the Curriculum” came to the fore. The former is defined as: “the purposeful integration of international and intercultural dimensions into the formal and informal curriculum for all students within domestic learning environments” (Beelen and Jones, 2015). The latter is seen as “the process of incorporating international, intercultural and global dimensions into the content of the curriculum as well as the learning outcomes, assessment tasks, teaching methods and support services of a program of study” (Leask, 2015). But more and more they are considered to be quite similar in content and focus.

Over the past decade, the relationship between these two components—internationalization at home and abroad—and the need to create a more central, integrated, and systemic approach to internationalization in order to eliminate fragmentation and marginalization, has spurred an interest in “Comprehensive Internationalization.” This is defined as:

A commitment and action to infuse international, global and comparative content and perspective throughout the teaching, research and service missions of higher education. It shapes institutional ethos and

values and touches the entire higher education enterprise. It not only impacts all of campus life, but the institution's external frameworks of reference, partnerships and relationships (Hudzik, 2015, p. 10).

Global Trends in Internationalization

In general terms one can say that internationalization over the past 30 years has seen the following key characteristics:

- More focused on internationalization abroad than on internationalization at home
- More ad hoc, fragmented, and marginal than strategic, comprehensive, or central in terms of policy development
- More in the interest of a small, elite subset of students and faculty than focused on global and intercultural outcomes for all
- Directed by a constantly shifting range of political, economic, social/cultural, and educational rationales, with increasing focus on economic motivations
- Increasingly driven by national, regional, and global rankings
- Little alignment between the international dimensions of the three core functions of higher education: education, research, and service to society
- Primarily a strategic choice and focus of institutions of higher education, and less a priority of national governments
- Less important in emerging and developing economies, and more of a particular strategic concern among developed economies.

In the past decade, however, one can observe a reaction to these trends. While mobility is still the most dominant factor in internationalization policies worldwide, there is increasing attention being paid to internationalization of the curriculum at home. There is also a stronger call for comprehen-

sive internationalization, which addresses all aspects of education in an integrated way. Although economic rationales and rankings still drive the agenda of internationalization, there is more emphasis now being placed on other motivations for internationalization. For example, attention is being paid to integrating international dimensions into tertiary education quality assurance mechanisms, institutional policies related to student learning outcomes, and the work of national and discipline-specific accreditation agencies.

At the same time there is a move away from internationalization as a Western concept:

In the current global-knowledge society, the concept of internationalization of higher education has itself become globalized, demanding further consideration of its impact on policy and practice as more countries and types of institution around the world engage in the process. Internationalization should no longer be considered in terms of a westernized, largely Anglo-Saxon, and predominantly English-speaking paradigm (Jones and de Wit, 2014).

Recent publications have given more attention to these emerging voices and perspectives (de Wit et al., 2017) and next generation insights (Proctor and Rumbley, 2018).

In other words, internationalization in higher education has evolved over the past 30 years from a rather ad hoc, marginal, and fragmented phenomenon to a more central and comprehensive component of higher education policy—although still more in rhetoric than in concrete action (de Wit and Rumbley, 2017).

Leask, Jones and de Wit (2018) for that reason state that the implementation of “internationalization of the curriculum at home” appears to be struggling to move beyond good intentions and isolated examples of good practice. According to them we are still far away from any form of internationalization that is inclusive and accessible rather than elitist and exclusive, the reason why they call for urgent attention to the following at a minimum:

1. We must, as scholars and practitioners, not only continue but also escalate our efforts at working together across disciplines, professional areas and national boundaries as well as within universities.
2. We must engage more with stakeholder groups beyond the academy, striving towards the common goal of creating a better, more equal and fairer world.
3. We must integrate internationalization with other agendas—disciplinary, professional, institutional, national, and regional—which are also focused on improving the quality of education and research for all students. Internationalisation of the curriculum, teaching, learning and service should not operate in a vacuum.
4. We must place emphasis on enhancing the quality of education and research for all students and staff in all parts of the world. This requires integrated policy and strategy as well as cooperation and partnership within and between institutions across the globe (Leask, Jones and de Wit, 2018).
4. Internationalization no longer is the exclusive domain of the Senior International Officers (SIOs) and their offices, but more and more of heads of other administrative and academic departments as well
5. Internationalization for higher education leaders has become more than oversight of the SIO and his/her office in tandem with the signing of Memoranda of Understanding (MOUs)
6. Budget implications are no longer marginal but substantial in both expenses and in income
7. Internationalization is for higher education leaders a key issue at the sector and system level, nationally, regionally and globally (de Wit et al, 2018)

A Complex Phenomenon

As noted by Streitwieser and Ogden (2016) “international higher education is a complex phenomenon that involves many different activities, players, institutions and realities” (p. 13).

As internationalization and global engagement become entrenched around the world as mainstream components of quality in higher education, the need to ensure the high quality professional preparation of those responsible for the internationalization agenda in their respective institutions or systems of higher education becomes more widespread and sustained. This is reflected well in the notion of “intelligent internationalization,” as expressed by Rumbley (2015):

‘Intelligent internationalization’ demands the development of a thoughtful alliance between the research, practitioner, and policy communities. Those participating in the elaboration of internationalization activities and agendas [must] have access to the information, ideas, and professional skill-building opportunities that will enhance their ability to navigate the complex and volatile higher education environment of the next 20 years (p. 17).

In tandem, an updated definition of internationalization emerged, reflecting these broader under-

Working towards inclusive international and intercultural learning for all means, according to Leask, Jones, and de Wit (2018), that we become more respectful of diverse contexts, agendas, and perspectives on a global scale. As internationalization has moved from the margins of higher education research, policy and practice, it has become clear that the previously disjointed approaches that characterized its earliest years have given way to an understanding that sophisticated synergies are required to realize its full potential.

The following points emerge from this evolving concept of internationalization of higher education.

1. Increasing importance of internationalization in the higher education agenda
2. Policy and practice of internationalization is no longer marginal and ad hoc but core to the agenda of higher education leaders
3. Internationalization has become a broader agenda for all domains of higher education policy: research, teaching and learning, and relation to society

standings of the nature and purpose of internationalization:

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 (de Wit et al., 2015, p. 29).

National Policies and Strategies for Internationalization

Over the past five years, several studies by the British Council (2016, 2017), the DAAD and the British Council (2014), Helms et al. (2015), de Wit et al. (2015, 2019), Crăciun (2018), and Perna et al. (2014) have looked into national policies and strategies for internationalization, and have generated a series of analyses, overviews, rankings, and recommendations on them. National tertiary education internationalization strategies and plans represent the most tangible and direct attempts by governments to play an active and decisive role in relation to internationalization, but there are substantive differences in their approaches, rationales and priorities.

A worldwide census of explicit national policies carried out by Crăciun (2018) reveals that only 11% of countries have an official strategy for internationalization, most having been adopted in the last decade. Such strategies have been launched predominantly by developed countries – three in four national policies come from members of the Organization for Economic Co-operation and Development (OECD). European countries have taken the lead in promoting strategic thinking about internationalization at the national level – two in three national policies come from this world region (Crăciun, 2018), and programs such as Erasmus+ and Horizon 2020 have led to further regional harmonization of higher education systems (British Council, 2017).

This is not to say that other countries have not taken measures to promote internationalization. In fact, to support internationalization processes, many

countries have taken both direct measures (e.g., re-evaluating their visa policies to give preferential treatment to international students and scholars, establishing bi-lateral or multi-lateral agreements through memoranda of understanding, and promoting transnational education through free-trade deals) and indirect measures (e.g., supporting internationalization in political discourse and giving universities autonomy to pursue internationalization activities). Nevertheless, explicit national policies ensure consistency between direct and indirect policy measures and provide a clear signaling of government commitment to internationalization.

However, it would be a misconception to assume that national policies have common rationales and approaches to internationalization. Differences exist between and among high-income, low-income, and middle-income countries with respect to their policies and practices. Also, there are differences in explicit and implicit policies and practices, with some countries having well documented plans and others have no plans but well-defined activities.

A recent study for the World Bank (de Wit et al., 2019) maps “National Tertiary Education Internationalization Strategies and Plans” (NTEISPs) for low- and middle-income countries. That study reflects well the context of the Caribbean region, even though its countries in general do not have very explicit national strategies or policies for internationalization. The study states that there is a divide between countries with explicit and implicit NTEISPs but finds that all countries surveyed have some form of explicit policy on internationalization in tertiary education. Further, in all national settings analyzed one can find implicit references to tertiary education internationalization in education and/or foreign relations policies. There is a divide between countries with policies directly focused on tertiary education internationalization and those in which internationalization is just one element of a broader policy or plan.

National governments are leading actors in the internationalization of tertiary education. Overall, one can describe the process of operationalizing NTEISPs as rather top-down. Most countries speci-

fy explicit geographic focal points for their tertiary education internationalization activities and, in most cases, these are high-income countries in the developed world, i.e., they are South-North oriented, but with a trend towards South-South cooperation emerging. There is a divide between countries focusing on incoming mobility, on outgoing mobility, and on two-way mobility. Most strategies focus on student mobility, and to a lesser extent on scholar mobility and transnational education. Research and publications collaboration; partnerships, networks, and consortia; and enhancing quality and aspiring to international quality standards, are quite common in national policies. Internationalization at home and of the curriculum, as well as national and foreign language policy, are rather marginal focal points in national policies. And there is very little evidence that NTEISPs are designed with the goal of advancing social justice, inclusion, and equity objectives. Leveraging tertiary education internationalization to meet the needs of historically marginalized and/or underrepresented populations does not appear to be a priority in any of the cases examined for this study.

The authors conclude from these findings the following. Low- and middle-income countries are becoming more active in defining national policies for internationalization and in fostering South-South cooperation, breaking with the “westernized, largely Anglo-Saxon, and predominantly English-speaking paradigm” of internationalization. But serious caution must be expressed with respect to this trend. The analysis revealed a degree of policy mimicry, in that the low- and middle-income countries considered in this study appear to have adopted many aspects of the Western paradigm of tertiary education internationalization by focusing heavily on mobility, on reputation and branding, and on South-North relations. There is also little continuity in their national policies, due to political and economic factors. The NTEISPs of low- and middle-income countries appear to sustain the dominance of high-income countries through the structure and terms of their scholarship schemes, their geographic priorities, and their choices with respect to partnerships in research and education.

Further, the authors observe that more attention paid to regional cooperation (as is emerging, for instance, among ASEAN countries); more South-South networking and partnerships; and a stronger focus on internationalization of the curriculum at home, are all needed to break the high-income paradigm in tertiary education internationalization and to develop policies and actions that build on the local, national and regional contexts and cultures of low- and middle-income countries.

These are valuable observations for the Caribbean region to take into account in developing internationalization strategies and policies for higher education, including technical and technological institutions.

Implications for Institutional Strategies

The main focus among internationalization strategies and plans is still placed at the institutional level. Indeed, institutions operate in many cases without a national plan in place. Where national plans do exist, institutions may operate in conflict or in alignment with the national agenda. A national policy may serve as catalyst or a drag on internationalization processes, but are mostly seen as a highly positive element for the advancement of internationalization. They incentivize institutions and individuals to assist in meeting national strategic goals through internationalization. But overall, institutions are still the main agents that drive internationalization. According to the most recent survey results from the 5th global survey on internationalization by the International Association of Universities (IAU), two-thirds of university leaders around the world consider internationalization to be an important agenda issue, although Marinoni and de Wit (2019) observe that there is an increasing divide between institutions that consider internationalization as being of high importance and those that do not.

They observe that:

the reasons for such a divide between HEIs that consider internationalization extremely important and those who do not is worth a reflection and deserves to be studied more in depth, especially if one considers internationalization to be an essential part of all

HEIs' mission and a sign of quality (Marinoni and de Wit, 2019).

The challenges that institutions encounter in developing and implementing internationalization strategies are diverse. There is pressure of revenue generation, competition for talent, and branding and reputation (rankings). There is pressure to focus on international research and publication, on recruitment of international students and scholars, and on the use of English as language of research and instruction. These challenges and pressures conflict with a more inclusive and less elitist approach to internationalization, building on the needs and opportunities of home university students and staffs. In other words, there are tensions between a short-term neoliberal approach to internationalization, focusing primarily on mobility and research, and a long-term comprehensive quality approach, which may be termed global learning for all. For the Caribbean and in particular for its technical and technological institutions these are valuable observations. Instead of putting emphasis on internationalization strategies oriented towards short-term challenges, Caribbean institutions should prioritize a more inclusive and less elitist approach to internationalization, building on the needs and opportunities of local students and staff.

Lessons for Caribbean Higher Education

The analysis above is of relevance for Caribbean higher education. Over the years, the focus in Caribbean higher education, even more than in the rest of Latin America, has been on outbound degree mobility of students and scholars. Further, it has been on capacity building support, primarily generated from Europe and North America.

An OBIRET survey on the internationalization of higher education in Latin America (Gacel-Ávila and Rodríguez-Rodríguez, 2018) shows progress in internationalization efforts, especially at the institutional level. However, these positive developments, as the authors state, should not ignore the improvements needed to achieve comprehensive internationalization in the region. According to the authors

Our region requires more public policy to frame, facilitate and promote its institutions' internationalization process. It also requires more involvement from the business sector. Making institutionalization an institutional priority calls for implementing a series of adjustments and reforms to institutional practice, such as the integration of the international dimension into planning, budgeting and evaluation systems; the formulation of operating plans for internationalization linked to institutional priorities, with allocation of the funding and human resources needed to ensure their viability; and the formulation of the corresponding evaluation and monitoring guidelines and procedures (Gacel-Ávila and Rodríguez-Rodríguez, 2018).

They also advocate promoting and incentivizing academics' involvement in internationalization activities, to improve international communication and visibility strategies at the national and regional levels, and within the institutions themselves to push for greater professionalization of the internationalization staff. According to the OBIRET survey the internationalization of the curriculum calls for increased efforts to establish internationalized academic programs for students who do not have the possibility to study abroad, and to promote the internationalization of research. They conclude that

For all of these reasons, the process of internationalizing higher education in LAC can still be characterized as more reactive than comprehensive. For LAC's internationalization process to contribute in a meaningful way to the transformation and improvement of the region's educational sector, the international dimension must be fully integrated by way of public and institutional policies. (...) This is the only way our region can harvest the fruits of the internationalization and globalization of the educational sector and make a noticeable difference to its educational systems, its level of international competitiveness and, consequently, to its citizens' quality of life (Gacel-Ávila and Rodríguez-Rodríguez, 2018).

These observations are important to take into account, but even more the need to develop a regional higher education policy and strategy, including internationalization, for the Caribbean and for its technical and technological institutions.

Another lesson is that “a globalized interpretation of internationalization requires a more nuanced approach to its delivery than has hitherto been the case” (Jones and de Wit, 2012, p. 39). A range of factors that need to be taken into account include:

- Geographical variation in social and economic needs resulting in differentiated local and regional responses
- Ethical issues in global engagement and sustainability of practice
- The importance of careful consideration of the local context and culture when engaging in cross-border activity (Jones and de Wit, 2012, p. 39)

A globalized view of internationalization requires that key constituents:

1. Put political and economic rationales in context by measuring the things which are important, not simply those which can be measured
2. Exploit the globalization of internationalization by learning from partners and from diversity of policy and practice
3. Remember the link between international and intercultural; internationalization of curriculum, teaching and learning, at home as well as abroad, should be a key priority
4. Understand the transformational potential of internationalization and the link with employability and citizenship, enable students, faculty and support staff to benefit from this
5. Practice what we preach; learn from internationalization research and practice in other parts of the world. (Jones & de Wit 2014, p. 29).

One of the main risks is that internationalization continues to be perceived as strengthening the dominance of the existing powers in international

higher education, whether regions, nations or institutions (Egron-Polak, 2012). Embracing diversity in this area led Egron-Polak & Marmolejo to write that “the concept of ‘emerging voices’ in the new higher education landscape should be comprehensive and inclusive in scope. It is not only one single, unified voice, nor does it always come from the same cluster of countries or from the same type of institutions” (Egron-Polak & Marmolejo, 2017, p. 14).

This is exactly what needs to be done by technical and technological institutions in the Caribbean region: develop independent internationalization strategies, reflecting both regional and institution-specific contexts.

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Technical and Technological Institutions in the Caribbean

Miguel J. Escala

Introduction

In this study on the Internationalization of Technical and Technological Institutions in the Caribbean we encounter three concepts that have different, debatable, and even controversial meanings. Following the definition and history of “Internationalization” by Hans de Wit, it is up to us to define and clarify the other two concepts involved: “Caribbean” and “Technical and Technological Institutions (TTIs)”. Although on the surface these terms are easy to define, they generate difficulties in terms of their meaning or coverage. What is the Caribbean? And what are TTIs? These are the two questions that we will try to answer to unify how we understand these concepts, which set the contextual basis for the institutions analyzed throughout this publication.

What is the Caribbean?

Depending on who is asked, the Caribbean has different definitions. Some visualize it in a narrow way, and others have a much more comprehensive con-

cept of the Caribbean. Caribbean for many is synonymous with beaches of blue waters and white sands, forgetting the scattered mountains of Hispaniola or the volcanoes of the Lesser Antilles (not to mention the Venezuelan and Colombian Andes, the Mexican mountains, and Central American elevations). For others it is made up only of islands, and they do not include countries of South America that are bathed by the Caribbean Sea and by tradition are considered Caribbean. Many, when they think about the Caribbean, only imagine populations of African descent, without taking into consideration the European descendants, the Asian descendants (Chinese, Indian and Indonesian), and those who are descendants of the original (indigenous) peoples. The Caribbean is all that and more (see Mateo-Rodríguez, 2013).

For many, music identifies the Caribbean, but few are aware of the great diversity in this area. There are many Caribbean rhythms with strong debts to African music, but almost always they are the result of a mixture of races and backgrounds.

Caribbean music ranges from merengue, son, salsa, calypso, reggae, reggaeton, bachata, punta, and vallenato, to Trinitarian chutney with roots in India, not forgetting the Zulia gaita, its furrusco, and its varieties. The Caribbean is music, but it is a variety of music. It is music that continues to be built and that impacts the regions from which it has its roots. Just as the Spaniards dance salsa and merengue (indeed these have become so popular that they are familiar far outside the region), the Africans adopted the calypso, and in the United States reggae was and continues to be welcomed and danced. The Caribbean's music may also be seen as promotional. For example, the phrase "the Caribbean ends in Guayaquil", which is attributed to Humboldt (Ministerio de Turismo de Ecuador, 2013), stems from a city that claims to be the "southern capital of salsa" in order to avoid competing with Cali, proud to be considered the "world capital" of the same Caribbean rhythm (Ulloa, 1989).

The Caribbean is also a region of great linguistic richness. The most commonly made distinction is between the English-speaking, the French-speaking, and the Spanish-speaking Caribbean, but we cannot fail to mention the Dutch-speaking Caribbean, the one that is home to Chibchenses languages (throughout the Caribbean coast of Central America), and even to the inhabitants who speak the "Carib" language (Kalinago) in Dominica or Arawak languages in Guyana and Suriname. Moreover, the Caribbean has been a region rich in sociolects and new languages: in addition to English and French Creoles, the Haitian being the best known and officially recognized, there is a Caribbean Hindustani, the Papiament of the Netherlands Antilles, the Garífuna of St. Vincent, and the dialects of the Honduran island of Roatán and the coastal cities of Belize, Honduras and Nicaragua.

It is the Caribbean that is touched by the waters of the Caribbean Sea (also called the Antilles Sea) but the region may also be defined in geographic terms by the Caribbean plate (Mateo-Rodríguez, 2013). However, the Caribbean is more than that. Addressing the Caribbean is not only complex in its geographical aspect, but also when we delve into the identity of its inhabitants. Torres (2017) explores sev-

eral interpretations of that common identity, from socio-cultural to chaos theory, through the political vision of the Conformation of the Antillean Confederation (a 19th century dream in the Hispanic Caribbean) to the shared adoption of plantations as an economic tactic in the development of the region, and the dialogue made necessary between African culture and European as a result of slavery, which was caused by the predominance of a plantation-oriented economy. Other studies have identified plantations and type of plantations (tobacco vs. sugar) as determinants of cultural characteristics of some Caribbean nations (Ferrán, 2019), which is indicative that "plantations" cannot be taken as an integrated independent variable, without defining the type. Mori (2010) identifies shared identity in the region as a utopia that has not been reached, thus affirming the argument of Prendas that "the Caribbean as a unified region... confers a sense of common citizenship and community is a product of imagination" (Prendas, 1996, p. 2). To understand the processes of internationalization of higher education in the Caribbean we have to understand these positions, all characterized by diversity and uncertainty.

After analyzing the more inclusive associations of Caribbean countries, we found little relevance to an overall understanding of the region's boundaries or its identity.

- The Association of Caribbean States consists of: Antigua and Barbuda, The Bahamas, Barbados, Belize, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panamá, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago, and Venezuela. It has as associate members: Aruba, Bonaire, Curaçao, Guadeloupe, French Guyana, British Virgin Islands, Martinique, Saba, St Barthélemy, Saint Martin (French side), St. Eustatius and Sint Maarten (Dutch side)
- Cariforum is comprised of Antigua and Barbuda, The Bahamas, Barbados, Belize,

Cuba, Dominica, Dominican Republic, Grenada, Guyana, Haiti, Jamaica, St. Kitts and Nevis, Saint Lucia San Vincent and the Grenadines, Suriname, Trinidad and Tobago.

- To the Caribbean Community or Caricom belong all the countries of Cariforum, except Cuba and Dominican Republic. But Montserrat, which does not appear in the Cariforum list, is a member. Associate members are: Anguilla, Bermuda, the British Virgin Islands, Cayman Islands, and Turks and Caicos.

It should be noted that Puerto Rico does not appear in any list, nor do the US Virgin Islands. Some islands that do not appear as associated members of the Association of Caribbean States are part of Caricom, including Bermuda, an island that is located in the mid-north Atlantic. We still – using these associations – do not define the Caribbean.

If we take the definitions of “Caribbean” adopted by university organizations that are members of the International Association of Universities, we find the following:

- The Inter-American Organization for Higher Education (IOHE) defines the Caribbean Region as one of the nine regions that make up the organization, which is made up of all the Caribbean islands plus Venezuela, plus the countries of South America that are members of Caricom. It has members in the French Antilles, The Bahamas, Cuba, Guyana, Haiti, Jamaica, Puerto Rico, the Dominican Republic, St. Lucia, and Venezuela.
- For the Union of Universities of Latin America and the Caribbean (UDUAL), the Caribbean is made up of islands that are in the Caribbean Sea: it counts among its members Cuba, Jamaica, Haiti, Puerto Rico and the Dominican Republic.
- For this work we find interesting the definition of the former Association of Universities and Research Institutes of the Caribbean (UNICA), today transformed into “Caribbe-

an Universities,” which defines the Caribbean as “the geographical area that includes the islands of the Antilles and the coastal areas of the countries surrounding the Caribbean Sea and the Gulf of Mexico, including Central America and the northern region of South America and the Guyana. Therefore, the Caribbean is an area of ethnic, cultural and political diversity that facilitates cooperation in a wide range of educational projects” (UNICA, 2010).

Although we accept diversity, confusion, and even the different senses of belonging to understand what the Caribbean is, we believe that the definition of UNICA gives us the framework we need to support our study, including the admission of diversity, and discovering in it a regional wealth supporting internationalization efforts.

Tertiary Education in the Caribbean

Tertiary education in the Caribbean has the longest history in the Americas, given that the region was where colonization started and the colonizing Spaniards began to found universities shortly after arrival. At the end of the sixteenth century the Caribbean region had four universities: Santo Domingo (1538), Mexico (1551), Santiago de La Paz, Santo Domingo (1558), and Tomista Santafe, today referred to as Santafe de Bogotá (1580) (Tünnermann, 1991). The first institution of higher education in America (Harvard) was founded in 1636, but took almost two more centuries to do so in the English Caribbean. Several authors consider Codrington College of Barbados, established in 1830, as the formal start of higher education in the region (Coates, 2012). In other “Caribbeans” the foundation of universities was even later. The Netherlands and France contributed to the formation of new systems, which were small and had their own characteristics (de Wit, 2017). Although the influence of various former colonizing countries is reflected in the contemporary diversity of systems, each Caribbean country has been building its own system with new external influences from the United States and even from France, especially in the conception of short-cycle programs.

The diversity of predominantly European influences, cultures, and languages has not contributed to the realization of joint associative efforts beyond the formation of UNICA (already described), although limited efforts have been achieved among certain countries, generally those sharing the same language. In the British Caribbean, the foundation of the University of West Indies (UWI) in 1948 with three major campuses in Jamaica, Trinidad and Tobago, and Barbados has contributed to a greater intra-regional collaboration and resource efficiency (Brock, 2008; Coates, 2012). The UWI is a very prestigious institution in the region and maintains articulation agreements with several institutions that mostly offer short-cycle programs. However, its relationship with Spanish-speaking countries is limited to hosting UNICA and participating in that association. For French-speaking countries, the Francophonie University Agency links the different universities and others worldwide; Spanish-speaking institutions that teach French also participate in that agency, thus becoming a multicultural meeting point. In Central America (including Belize and the Dominican Republic), the Central American University Superior Council (CSUCA) brings together (mainly public) universities in the region and facilitates intra-regional collaboration. CSUCA is perhaps the longest-running university organization in the region but its membership is only open to public institutions in a region where private universities have increased considerably in recent decades.

The development of specialized agencies issuing accreditation—familiar in almost all countries—is also an example of a regional approach with relative success. The most successful of these is the Caribbean Accreditation Authority for Education in Medicine and other Health Professions (CAAM-HP) which, although it was originally intended for Caricom countries, has already participated in the accreditation of a medical program in a Dominican university and has signed with the Ministry of Higher Education, Science and Technology of the Dominican Republic to offer accreditation services to medical careers and other health professions (CAAM-HP, 2019). CAAM-HP itself is an accredited as an agency by the World Federation for Medical

Education (WFME), which makes it part of a select group of 20 agencies worldwide. In the region, the Mexican Council for the Accreditation of Medical Education is also part of the WFME.

In engineering, there are three accreditors in the region, however none of the three is a signatory of the Washington Accord of the International Engineering Accreditation Alliance (IEA) (Larrondo-Petrie, 2015). We refer to the Central America Accreditation Agency for Architecture and Engineering Programs (ACAAI), to the Greater Caribbean Regional Engineering Accreditation System (GCREAS) (Pirela, Coto, Crespo, Larrondo -Petrie, Escale, & Gephardt, 2010), and the Caribbean Accreditation Council for Engineering and Technology. None of these efforts in engineering accreditation are empowered or seeking leadership in the task of developing a comprehensive regional approach meeting IEA standards.

Puerto Rico, because of its strong relationship with the United States, seeks accreditation through American institutional accreditors, particularly the Middle States Association, which is the accreditor of the Puerto Rican universities.

Within this macro regional system of diversities, of great differences, of successful collective efforts, of others not so successful, and of myriad collaboration opportunities, a similarly diverse range of institutions that contribute to the regional offer of higher education has emerged.

What are the Technical and Technological Institutions (TTIs)?

Now, we should define what Technical and Technological Institutions (TTIs) are as institutions that are also part of that macro regional system. We refer in this study to TTIs as institutions that offer post-secondary training programs taken after 11 or 12 years in regular schools to obtain a “baccalaureate” diploma, known in some places as high school, in others as a secondary school diploma. However, the training programs offered by TTIs are completed in less time than traditional university degrees. These institutions are similar to community colleges in the United States (a very well-known model), translated

by Moura and Garcia (2003) as “higher technical institutions” that for some offer “non-university technical education” (Delfino, Gertel, Sigal, 1998). In summary, the TTIs are institutions offering academic programs in less time than those that lead to obtain a bachelor’s degree or equivalent. In terms of UNESCO, we refer to institutions that offer only Level 5 programs as defined by the International Standard Classification of Education (ISCED 2011):

Programs at the ISCED 5 level, or short-term tertiary education, are often designed to provide participants with professional knowledge, skills and competencies. In general, they are practical, occupationally specific and prepare students to enter the labor market. However, programs can also provide a path to other tertiary education programs (p. 48).

The conceptualizations of the institutions in question are heterogeneous. López and Sánchez (2006) identify three different conceptualizations of the “technological institutions.” The first conceptualization refers to those institutions that only offer level 5 training programs in all training areas, meaning in social sciences, health, administration, tourism and technology. In Conceptualization 2,

technological institutions are considered to be those that only offer level 5 training programs, but are linked to technologies (engineering, computer science, and other applications of science). Conceptualization 3, for the above mentioned authors, includes those same technological training programs but with the flexibility that they can be offered at any level (some institutions may offer programs leading to higher technical and engineering training without offering postgraduate degrees; others may offer postgraduate degrees without offering the superior technician). We have added a fourth conceptualization that resembles the third, but refers to all training areas, not specifically those identified as technological.

All these conceptualizations are reflected in the institutional mission adopted and of course in the conception and curricular offer of the given education provider. Many community colleges or “higher technical institutes” (Moura and Garcia, 2003) in the US reflect Conceptualization 1. In some cases, they have modified their mission to expand their offer at level 6. The typical case is Miami Dade College, which for many years was a model for community colleges and today offers level 6 programs in several areas. Miami Dade College is currently a case of Conceptualization 4.

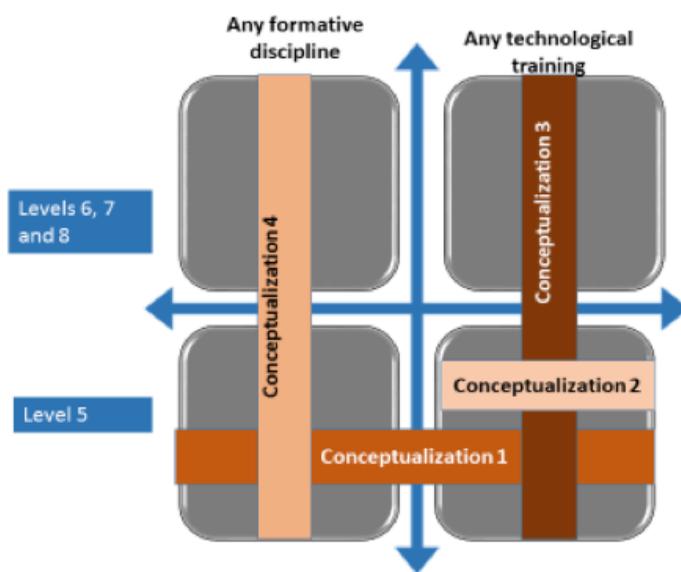


Fig. 1 Dimension for the conceptualization of the ITTs (Adapted from López & Sánchez, 2006)

The development of these institutions in the Caribbean (as we define it) is quite varied. Three extra-regional countries, the US, France, and Canada, have served as models or advisors in the processes of forming national institutions or sub-systems. Caribbean TTIs also reflect changes in other countries, often depending on domestic demand and its particularities. Many Mexican Technological Universities (grouped in the National Association of Technological Universities, ANUT) that originally corresponded to Conceptualization 2 modified their academic offer to begin offering engineering, a step not very well evaluated by some actors (Flores, 2009). In other countries something similar has happened. In the case of the Dominican Republic, several private Technical Institutes of Higher Studies became universities, subsequently eliminating their offer of level 5 programs. The case of the Technological University of Eastern Cibao (UTECO), which began as a Technical Institute of Higher Studies, is interesting: for several career paths it requires a first degree of “higher technician” with compulsory internship, followed by a possible transfer to a “licenciatura” degree program or equivalent. In most of the English-speaking islands there are TTIs with short-cycle courses as well as planned articulations with regional or extra-regional universities. In the Bahamas, the current university is the result of the evolution of the original college that only offered short-cycle careers.

One of the expected characteristics of TTIs is the level of relationship with productive sectors (industry), and at the same time an ability to articulate with previous and subsequent educational levels. However, it is important to highlight that the articulation sought with other educational levels does not prevent short-cycle programs from having a terminal profile that facilitates the incorporation of graduates into the labor market (Marmolejo, 2016). The programs that prepare for the labor market should not be half of a bachelor without a clear output profile. Instead, they should focus on the development of relevant competencies for insertion in the labor market. The diplomas awarded by short-cycle programs (superior technician, university superior

technician, associate degree, associate diploma, technique, or associate degree), ought then to demonstrate whether they prepare for work or if their nature is pre-university preparation (OECD, 2019).

The Inter-American Space of Technical and Technological Institutions (EIESTEC) program of IOHE in its Declaration of the third EIESTEC Meeting held in 2016 in Cali, Colombia expresses key ideas to understand the nature of TTIs and their short-cycle offer:

We believe that short careers constitute a necessary offer of higher or tertiary education, and that they boost institutional responses to the demands of the productive sectors, while making higher education an environment for the development of student populations with technical or technological vocation or interested in undertaking own projects that require this type of training. We support the articulation efforts (achieved and in development) between the short careers and the more traditional university careers within the institutions, and from one institution to another, as well as the articulation between the programs offered by professional technical training institutions and those offered by institutions of higher or tertiary education. Likewise, we encourage greater articulation between the vocational technical training programs offered at secondary level with other levels and modalities.

The participants of EIESTEC are institutions that only offer short-cycle training programs (Level 5), as well as institutions offering short-cycle programs and others corresponding to Level 6 (or more advanced levels). In addition, institutions that do not offer short-cycle programs but that design their Level 6 curriculum to facilitate articulation with short-cycle careers offered by other institutions are also welcome to participate in EIESTEC. Thus there are various conceptualizations operating within the group, but a common interest in short-cycle programs broadly construed.

Let us see by country the institutions that responded to this study's call for contributions and the conceptualization that corresponds to each of them:

Table 1. Characteristics of the institutions participating in the study (assembled by author)

COUNTRY	NAME OF THE INSTITUTION	NATURE	CONCEPTUALIZATION
COLOMBIA	BOGOTÁ TECHNOLOGY CORPORATION	PRIVATE	1
COSTA RICA	NATIONAL TECHNICAL UNIVERSITY	PUBLIC	4
CUBA	MINISTRY OF HIGHER EDUCATION	PUBLIC	4
HAITI	CANADO TECHNIQUE	PRIVATE	2
HAITI	HAITI TECH	PRIVATE	2
PUERTO RICO	INTER-AMERICAN UNIVERSITY OF PUERTO RICO	PRIVATE	4
DOMINICAN REP.	TECHNOLOGICAL INSTITUTE OF THE AMERICAS	PUBLIC	2
DOMINICAN REP.	HIGHER ACADEMY OF AERONAUTICAL SCIENCES	PUBLIC	2
ST. KITTS & NEVIS	CLARENCE FITZROY BRYANT COLLEGE	PUBLIC	1
ST. LUCIA	SIR ARTHUR LEWIS COMMUNITY COLLEGE	PUBLIC	1

We have, then, a variety of institutions, public and private, that assume their mission as TTI from various conceptualizations, with a concern for short-cycle programs, and which are offered in three languages. Further, this sample reflects the participation of the largest island in the Caribbean, a shared island (the second largest), and an island of the Lesser Antilles, as well as, the countries that to the south and west are bathed by the waters of the sea that defines us.

These are the TTIs of this study, this is the Caribbean of this study. We embrace the variations, imaginations, and definitions that comprise a range of national and institutional settings. That Caribbean – our Caribbean – and its TTIs reveal their internationalization efforts in the pages that follow. What these institutions tell us, is not imagination.

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Internationalization of Technical and Technological Institutions in Haiti: the cases of “Haiti Tech” and the “Centre de Formation Professionnelle d’Haïti”

Pierre Lionel, Rhony Desrogène, and Aly Loubert

The Education System of Haiti

Primary and Secondary Education

Most of the schools in Haiti are private, and are either religiously affiliated or connected to an international partner (Canada, France, United States). Ninety percent of school-going youth attend these private institutions. The educational system of the country is composed of informal and formal sectors. The informal sector is dedicated to literacy education and post-literacy education for individuals 15 years and older. The formal sector contains five lev-

els: pre-school education, primary education, secondary education, vocational education, and higher education.

Pre-school education is not obligatory in Haiti and serves to educate children between three and five years old. Primary education is offered at 15,200 primary schools in the country, a mix of local, religious, and NGO-affiliated schools. In the ninth year of primary education, children complete an official exam that gives them access to secondary education.

School-age population by education level

Pre-primary	754,610
Primary	1,464,834
Secondary	1,610,934
Tertiary	1,059,062

Source: UNESCO (n.d.). Haiti: Education and Literacy. Retrieved from <http://uis.unesco.org/en/country/ht>

Each year, approximately 20% of children enter into secondary education (compulsory education lasts six years from age six to age 11). Secondary education is organized in three levels: the first level prepares children for higher education; the second level prepares children to become technicians; and the third level trains teachers for the first two levels of primary education. There are plans underway to reform secondary education in the years to come.

Vocational and Technical Education

Technical and vocational education is controlled by “l’Institut National de Formation Professionnelle”

(INFP). The classes offered prepare students for employment in various fields and vary in length depending on the sector. Relevant training is delivered through two networks:

- the formal network through vocational training centers or institutions;
- the informal network through the “apprenticeship system”.

The formal network comprises 447 centers grouped into five categories of institutions accessible according to the number of years of schooling

completed. Ten percent of these centers are public. The five categories of formal network institutions include:

1. Technical Education Institutions (TEI), requiring at least nine years of study;
2. Vocational education institutions (VEI) requiring seven years of schooling and involving mainly practical training;
3. Agricultural training institutions (ATI) requiring at least ten years of prior study and offering training to become an agricultural technician;
4. Home centers (HC) requiring seven years of schooling;
5. Vocational training centers (VTC), requiring basic literacy skills and supporting students to become semi-skilled workers.³

Higher Education

The Working Group on Education and Training (2010) reveals that Haiti's higher education system currently comprises 159 higher education institutions, of which only 57 are officially recognized by the Ministry of National Education. The offer of the public sector, specifically the State University of Haiti, includes 18 colleges and universities and newly created universities (2006-2010). The relevant faculties are mostly in Port-au-Prince. The private sector comprises a set of universities from different fields that provide primarily limited undergraduate training.

In the official nomenclature of "Ministère de L'Education Nationale et de la Formation Professionnelle" (MENFP), higher education includes university and non-university education. Higher and university education covers a period of two to six years, depending on the field of study and the grade considered. In fact, there is currently no structure that coordinates the activities of higher education and university institutions although the organic law of 23 October 1984 refers that function to the MENPH. However, there is no specific legal framework. Given this circumstance, sector actors refer to

eight articles of the constitution of 1987. These articles are the source of both confusion and misinterpretation.

The supply of the public sector in terms of capacity of the State University of Haiti and the public universities represents 65% of the 15,000 to 20,000 students admitted to the sector overall, while the private sector welcomes 35%. It should be noted that 50,000 high school graduates apply each year, while the maximum capacity of the entire system is fewer than 20,000 university seats. This weak supply is aggravated by the devastating effects of the January 12, 2010 earthquake that struck Haiti and destroyed thousands of homes, as well as 90% of schools and universities.

Haiti Tech

Haiti Tech is a private initiative of Florida's Haitian and American communities and was launched in 1997. Its founders came from the fields of education, industry, commerce, and business. Twenty members of the business and education community, including Haitians and foreigners, constitute the board of directors of the Haiti Tech Foundation. The institution has a staff of forty-seven full-time employees serving as administrative, program, and support staff and thirty temporary trainers.

Haiti Tech does not receive any subsidies from the state. The Foundation's resources consist of the endowment of members, donations and gifts, the loans it may contract, and fees and rewards it receives in the course of its activities. The institution offers both basic diploma programs and continuing education, as well as customized and special training programs.

Basic Diploma Education

Initial (or basic) vocational and technical training of one or two years leads to a diploma certifying the courses and programs completed by a given learner. Haiti Tech offers the following programs: civil engineering techniques (building construction); industrial engineering techniques; solar electricity;

³ Haiti Tech receives post-secondary postulants; the level of programs offered and number of hours of training are at the level of higher education institutions and this detail is not included in the classification table presented above.

superior techniques in business; computer techniques; telecommunications; and electrotechnics.

Continuing Education

Continuing training is directed to professionals already on the job market and aims to improve their skills or encourage the acquisition and mastery of new skills or technologies. Haiti Tech offers about thirty training modules, which are available to the general public. More than 2,500 participants attended the institutions from 2003 to the present day to utilize these programs and update their skills.

Customized Training

Haiti Tech puts the skills of its trainers at the service of companies to meet specific à la carte training

needs. From 2003 to the present more than thirty companies have benefited from the services of Haiti Tech in the training of their staff.

Special Training

Haiti Tech has executed about twenty very short training programs under the heading of “special programs”. The target audience has typically been young people or adults who are out of school or earning wages at a low-income level, and who reside in at-risk neighborhoods. To date, more than 3,000 participants in this area have graduated from study at Haiti Tech, many of them benefiting from financial support by thirty donors (NGOs and private companies both being represented in this pool).

Performance Indicators

Number of student cohorts having graduated from Haiti Tech	25
Number of students graduating between 2000 and 2019	3852
Average graduation rate per promotion	75%
Dropout rate	20%
Percentage of graduates who traveled abroad	7%
Employability rate of young graduates	60%
Percentage of women enrolled	24%
Number of companies where students work	206
Number of students who received financial assistance, 2003-2019	1950

Internationalization of Haiti Tech

The Haiti Tech project was initiated through internationalization. In fact, it is the result of joint efforts by Haitian economic actors and representatives of Florida’s educational sector. To launch it, ten Haitian experts were selected and sent to the United States. The institutions involved in the conceptualization were: St. Thomas University, Miami Dade County Public Schools, Broward Community College, Miami Lakes Educational Center and Technical College, Turner Tech High School, and Lindsey Hopkins Technical College. The seven months of

study in the US conducted by these ten experts responsible for implementing the project stimulated cultural exchanges, the appropriation of good practices, curriculum development, and skills transfer.

In 2001, thanks to French cooperation, two technician superior programs were implemented: superior techniques in business and techniques of industrial engineering. French trainers provided courses for three years; exchanges were developed with Martinique and Guadeloupe.

A second partnership with Belgium allowed for skill-building among trainers and also the implementation of an autotronic program. Further,

Switzerland has supported the training of trainers, donated teaching materials, organized exchanges with its training system, and continuously updated the training program in civil engineering techniques (in particular chained masonry, a masonry technique appropriate for earthquake-prone areas).

Recently, Haiti Tech has developed an educational project with the Netherlands to promote exchanges strengthening the managerial capacities of the institution, updating curriculum, standardization, and training of trainers. Haiti Tech has also developed a set of Canadian partnerships, specifically with general and vocational colleges in Quebec (CEGEPs): the Cité Collégiale de Ottawa, Trois Rivières and Edouard Monpetit. This has facilitated the mobility of Haitian students and trainers to Canada and Canadian teachers to Haiti. Joint projects have been developed and executed mainly with the CEGEP Trois Rivières, including a development document to help Haiti Tech to perform better.

In addition, Haiti Tech has signed two Memoranda of Understanding with American Universities specializing in E-learning. These are Madona University and America Digital University (ADU). The objective of this project is to provide quality remote training from a microcomputer connected to the internet. Haiti Tech provides local management of these programs. Additionally, activities have also been developed with Peralta and Solano community colleges in the United States. Haiti Tech and Peralta have reached an agreement to provide continuing education for Haitian companies, whereas the agreement with Solano is to jointly develop a campus project in Haiti. Finally, Haiti Tech is a Cisco Networking Academy. This allows our students to pass all relevant exams and to earn an international certification.

It is also notable that Haiti Tech is affiliated with the Latin America and Caribbean Network Information Centre (LACNIC). This allows several of its trainers participate in different trainings LACNIC operates in Panama, the Dominican Republic and Costa Rica.

In summary, Haiti Tech has been, and continues to be, an institution open to internationalization in many forms.

Why Must the Institution Internationalize?

The internationalization of higher education is now a reality for all institutions. This is probably the most significant transformation experienced by higher education systems during the last two decades. Its manifestations are the matching of the contents of training to international standards, the growth of the number of internationally mobile students, the increasing demand of the students for experiences abroad, partnerships with international institutions, internationalization of teaching staff, deployment of the offer abroad, etc. Haiti Tech is committed to internationalization for reasons related to transfer of competence as well as the goal of curriculum harmonization and educational and cultural exchange.

The internationalization of Haiti Tech assumes the internationalization of each of its stakeholders. The education offered must provide each student a wider and deeper appreciation of other cultures and peoples. In a globalized world, Haiti Tech cannot escape this new vision that the world of higher education has had for some time now. It is in this context that we are engaged in internationalization in order to apply our expertise and to benefit from the profits that will flow from it. The goal or vision set by Haiti Tech is to be the national leader in technical and professional training, and concurrently to be more competitive in the regional and global markets.

Our adherence to internationalization is justified by cultural, scientific and educational exchanges and enables our students, trainers, and institution to engage in international activities such as mobility, research, liaison, and development projects. At the educational level our commitment to internationalization is part of the improvement of teaching quality as well as the harmonization of study programs. Indeed, one of the main reasons for the internationalization of our institution is the establishment of international academic standards guiding teaching and research in the region.

From an economic point of view, the institution is driven by a search for economic growth; the aim is to be very competitive and present in the labor market. Collaborating within the Caribbean bloc will allow Haiti Tech to better prepare its human resources according to local and regional specificities, thereby better positioning itself as an economic bloc. Further, this collaboration will allow institutions to pool resources and be more efficient, taking into account the limitations of resources and new technologies.

The main objectives of Haiti Tech's internationalization strategy are:

1. *To establish a culture of internationalization in the life of the institution:* The objective is to internationalize curricula and related activities
2. *Faculty participation in international activities:* The objective is to establish a framework to recognize, support and evaluate faculty participation and leadership in international activities
3. *International development and cooperation:* The objective is to establish a framework to recognize, support and evaluate international development activities
4. *International research and knowledge mobilization:* The objective is – keeping in mind the priorities set out in teaching and research plans – to adopt a targeted regional or national strategy including intersectoral projects, travel and research partnerships within defined geographic boundaries, and to increase the number and strength of international collaborations
5. *Opportunities for international study experience:* The objectives are to harmonize international school experiences with the international regions targeted by the school, and to improve pre-departure training and support for students participating in formative experiences abroad
6. *Strengthening international exchange capacity:* The objective is to appropriate essential linguistic tools: English, Spanish, and French
7. *Contribution to the regularization of the legal*

framework for higher education in Haiti: The objective is to make a plea for better governance of the country and especially the Haitian education system

The main objectives and recommendations for regional cooperation within the Caribbean are to:

- I. Develop a regional research strategy and international partnerships leading to cross-sectoral collaborative projects, faculty and student mobility, and recruitment within specific geographic boundaries. The following actions will be undertaken:
 - A comprehensive organizational assessment of existing international priorities and activities with the aim of developing a focused and coordinated international strategy, with an emphasis on specific projects and activities
 - Seek to strengthen links with local institutions, governments, and civil society organizations. This can be done by creating new partnerships and optimizing existing ones.
 - Create a committee to carry out the preliminary organizational assessment and a high-level monitoring of the new international strategy. The committee can provide support for faculty and program integration, as well as develop and oversee the implementation of activities specific to the region
 - Take account of the unequal levels of consortium members and find strategies that can support a real synergy among members and facilitate the success of our project
2. Establish the foundation necessary to realize and evaluate international commitments. The following actions will be undertaken:
 - Launch a strategic planning process to harmonize and integrate international policies, initiatives, and programs that vary in scale and scope
 - Develop clear commitments, strategies, indicators, and targets for each priority area related to internationalization. This will provide a solid foundation and a road map

for successful internationalization in the region.

- Determine the ways and means for the acquisition of financial resources necessary for the realization of internationalization
- 3. Promote the internationalization of study programs. The following actions will be undertaken:
 - Improve dual-degree opportunities, international opportunities, etc. as part of the menu of course options.
 - Encourage reporting on internationalization efforts and global commitments in annual reports by creating specific positions to reflect these strategies
 - Invest in a careful analysis of current strengths and gaps, based on current internationalization efforts (this will involve reviewing data from annual reports, etc.)
- 4. Promote the establishment of joint projects between and among members. The following actions will be undertaken:
 - Explore promising fields and opportunity niches
 - Identify the potentialities and comparative advantages of each institution
 - Cooperate for the creation of surplus value in the interest of all

Concluding Remarks

Haiti Tech is an educational center that has been developed on the basis of international development cooperation. It continues to aspire to contribute to local, regional Caribbean, and global development through its partnerships with the developed world but increasingly also within the Caribbean region, through its internationalized curriculum, by means of increased quality in line with international standards for technical and technological institutions. The same is true of CFPH Canado Technique. Both institutions recognize the importance of internationalization as part of their contribution to local, national, and regional development. Further, at both institutions there is an ongoing transition from international development cooperation as the basis for

their creation, initial development in the local and national contexts, to more pro-active regional and global roles. Haiti Tech has a more developed internationalization strategy than CFPH Canado Technique, but still has a long way to go from intention to realization of intended outcomes.

CFPH Canado

The CFPH (Technical Training Center of Haiti) Canado Technique was established in October 1973. It has trained generations of technicians entering the labor market for 46 years. Canado Technique is a reference for professional and technical training. It offers four basic training programs: computer networking techniques; electromechanics; telecommunications; and industrial maintenance mechanics. In addition, in terms of continuing education, it offers short-term and tailor-made training to both individuals and local businesses. The center has qualified staff, as well as laboratories and workshops that meet the requirements of the competency-based approach, which have been in use since 2009.

The level of the diploma offered is similar to a DTS (Higher Technician Diploma). Canado Technique is a vocational and technical training center that admits high school graduates to two-year programs. It is a private congregational school receiving public subsidies. Since its foundation in 1973 by the Congregation of the Brothers of the Sacred Heart, the CFPH, better known under the name of Canado Technique, has sought to establish partnerships with various local actors in the technical and professional sector, with NGOs, the Haitian State, and especially with international actors.

In particular, CFPH has repeatedly benefited from Canadian government assistance. The latest aid received from the Canadian government, specifically from CIDA, has

has turned Canado Technique into the best vocational training center in Haiti, and one which applies the competency-based approach as faithfully as possible. Separately, the goal of USAID/LEVE assistance is to turn Canado Technique into the first training center in the country with welding certification. In addition, support of the COF/FOCADES/APEFE allows graduating students to do a training or an internship in Belgium. APEFE, which is an institution of Wallonia-Brussels, works with Canado Technique in other projects as well, for example the training of trainers of public centers and the provision of scholarships of excellence for Canado Technique students. Moving forward, APEFE and Entre-Pairs will give financial support to Canado Technique in order to increase programmatic offerings with two new courses: coding and multimedia (3D).

Canado Technique also seeks to develop partnerships with other international vocational centers in order for its students to receive a double degree. With the goal of being more competitive in the global labor market, the CFPH has intensified its international contacts and exchanges with professional and technical centers or universities in other countries and regions including the United States, the Caribbean, and Europe.

The Internationalization of Technical and Technological Institutions of Higher Education in the Dominican Republic, the cases of the “Las Americas Institute of Technology” (ITLA) and “Academia Superior de Ciencias Aeronáuticas” (ASCA)

José Armando Tavarez and Aniberky Mateo Moreno (ITLA), Stephanie Silfa and Clara Fernández (ASCA)

The Higher Education System of the Dominican Republic

In the Dominican Republic, Law 139-01 created the National System of Higher Education, Science and Technology, establishing operational regulations and mechanisms ensuring the quality and relevance of institutional services. Further, 139-01 provides the legal basis for national scientific and technological development.

The National System of Higher Education, Science and Technology of the Dominican Republic is made up of a set of institutions that are explicitly oriented to achieve the aims and objectives of higher education and the scientific and technological development of the country. The Ministry of Higher Education, Science and Technology, or MESCYT, is the body of the executive branch in the field of higher education, science and technology; it is responsible for promoting, regulating, advising, and administering

this National System of Higher Education, Science and Technology. In addition, MESCYT ensures the execution of Law 139-01’s provisions as well as relevant policies emanating from the President.

The higher education system as a whole is formed by those institutions that are dedicated to research and thus aimed at providing the country with the knowledge and technologies required for its development. These institutions can be classified as follows:

- a) Higher education institutions;
- b) Institutes and/or centers of scientific and/or technological research.

Article 23 of Law 139-01 establishes the following levels of higher education training:

- a) A higher technical level, which grants the title of senior technician, technologist, professor and equivalents;

- b) A grade level that grants the degrees of architect, engineer, doctor and other equivalents;
- c) A graduate level that grants specialization, master's and doctoral degrees.

Based on these levels, article 24 further classifies the institutions as follow:

- a) Higher Education Technical Institutes: authorized to teach only technical fields at a higher technical level
- b) Specialized Institutes of Higher Education: authorized to teach technical fields and grant degrees at the undergraduate and graduate level in specialty areas
- c) Universities: authorized to teach careers and grant degrees at any of the levels specified in article 23 of Law 139-01

The Dominican Republic has 50 Higher Education Institutions (HEIs) distributed by category as follows: five higher education technical institutes, 12 specialized institutes of higher education, and 32 universities.

According to the General Report on Higher Education Statistics 2017 and Historical Summary

2005-2017, MESCYT (2017), 562,667 students were enrolled in Dominican HEIs in 2017 and 506,731 in 2016, with an annual growth of 11.2%. This enrollment volume represents a 60.58% rate of the total population aged 18-22.

In terms of sex, female students represent 63.96%, while male students represent 36.04% of the entire student body. Of the total number of students enrolled, 57.43% are in the private sector and 42.57% in the public sector. As for institutional category, 97.05% of all students nationwide are enrolled at a university, while 1.11% are at specialized institutes, and 1.84% at technical institutes.

The total enrollment of the five higher education technical institutes in 2017 was 10,362, which represents 1.84% of total enrollment for that year, far below the goal established by the Ten-Year Plan, which dedicated Strategic Program 13 to this purpose. The population by institution for 2017 is as follows:

INSTITUTOS TÉCNICOS DE ESTUDIOS SUPERIORES

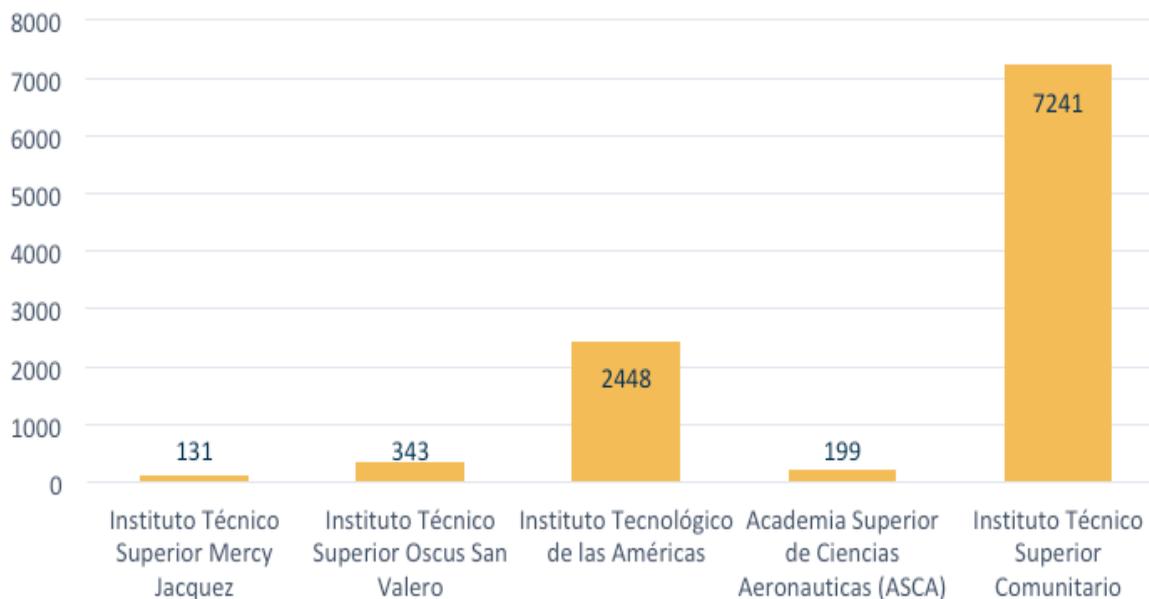


Figure 1: General Report on Higher Education Statistics 2017 and Historical Summary 2005-2017 (MESCYT, 2017)

Currently Law 139-01 is being revised due to the need to implement the “National Qualification Framework”. Several meetings and discussions have been held under the coordination of the MESCYT with the goal of integrating all system actors (MINERD, 2016).

The National Qualifications Framework is an instrument for classifying qualifications based on a set of criteria corresponding to certain levels of learning. Its purpose is to integrate and coordinate national education and training subsystems, particularly at the technical-professional levels, and to improve transparency, access, progression and quality of qualifications in relation to the labor market and civil society.

The institutions responsible for the framework are the Ministry of Education (MINERD), Ministry of Higher Education Science and Technology (MESCYT), Ministry of Labor, Ministry of the Presidency, Ministry of Economy Planning and Development (MEPyD), and National Institute of Vocational Technical Training (INFOTEP).

Graduates

In 2017, 59,562 new professionals graduated from Dominican HEIs (69.8% of whom identified as female and 34.22% male). This represents a four-year graduation rate of 48.93%.

Of these graduates: 4.1% were at the technical level; 76.8% the graduate level; 8% the specialty level; and 11.1% the master’s level. Only 0.05% of students graduated with a doctoral degree.

Teachers

The higher education system of the Dominican Republic has 20,291 professors, of whom 11,420 (53.6%) are men and 8,881 (43.7%) are women. In these teaching roles there are a total of 3,957 nationals from other countries, who together represent 19.5% of the total faculty. The highest representation is of professors originally from Cuba (with 130), followed by Spain (80), Venezuela (50), and the United States (44). Other groups include 40 professors originally from Colombia, 29 from Haiti, 23 from Argentina and 21 from Mexico.

International Scholarships

During 2017, the Ministry of Higher Education, Science and Technology continued its efforts to build international capacity, granting 2,511 international scholarships, of which 66% were assigned to women and 34% to men. Some 16,278 applications were received through the newly designed international scholarship platform.

MESCYT awarded scholarships supporting study at HEIs in 24 countries; 71% corresponding to Spain, 7% to the United States, 6% to the United Kingdom, 3% to France, and 2% (each) to Cuba and Brazil. In addition, scholarships were awarded for study in Italy, Russia, Germany, Puerto Rico, Mexico, Honduras, Switzerland, the Czech Republic, Canada, Venezuela, Argentina, Belgium, Colombia, Israel, Japan, Lithuania, and Peru.

Fourteen scholarships were offered to study French, 36 scholarships to study Portuguese, and 42 scholarships were to support software development training of the Digital Republic Program, exceeding the goal set for 2017 by 5%.

National Policies for the Internationalization of Tertiary Education in the Dominican Republic

The Strategic Plan for Higher Education (SEESCYT, 2012) mentions “internationalization” more than 50 times in its text, and also incorporates it into one of the eight plan objectives, reflecting that internationalization is a key component of system modernization. The relevant objective reads: “Modernize Dominican higher education; promote internationalization; promote innovation processes; strengthen SEESCYT, HEIs, the use of ICTs, the opening of new educational modalities and lifelong education” (p. 6).

The Strategic Plan for Higher Education lists internationalization under Project #2 of Strategic Program #1, which seeks to improve the quality of higher education. The objectives of this project are to:

- a) Strengthen the image of the Dominican Republic as an exporter of higher education services, giving a better positioning of the

country's universities abroad, promote areas of greater relative development presented by the university system and promote the integration of Dominican universities to boost their international consideration

- b) Update policies and procedures for the internationalization of Dominican higher education to be followed by HEIs
- c) Promote the formalization of collaboration and cooperation agreements of the SEES-CyT and IES, with universities and international cooperation organizations, to contribute to the internationalization and improvement of the quality of Dominican higher education
- d) Facilitate the emulation and competitiveness of Dominican HEIs in national and global contexts through the internationalization of higher education
- e) Facilitate the improved ranking of Dominican HEIs in comparison with prestigious international universities

In reading the Strategic Plan for Higher Education, internationalization stands out as a mechanism for improving the quality and positioning of Dominican higher education, giving to the regulatory entity (SEECYT in 2012, and then MESCYT) a role as an actor in the process. However, the strategic plan does not mention at any time the concepts of “global citizenship,” “internationalization at home” or “internationalization of the curriculum,” though it does address student and academic mobility.

In the five-year evaluation documents of 2019, ordered by Law 139-01, internationalization is included on page 29 as one of the six components to be evaluated within dimension #4, titled “Relationship with the Environment”. The criterion proposed for evaluation reads:

This component integrates policies, mechanisms and initiatives projection, cooperation and validation or recognition in the international context. It implies the establishment of relations with extra-national institutions or organizations in pursuit of academic, research, exchange or teaching

and student mobility objectives (p.119).

The document envisages the following standards that will be evaluated: mechanisms of cooperation and collaboration; adoption of an internationalization policy; the existence of cooperation and collaboration agreements; an international experience among academics at least once per year; an international experience for students at least once per year.

In the Dominican Republic, both the higher education system and its regulatory body have sought to emphasize internationalization over a period of years and with distinct characteristics. These are ingrained in the evaluation processes of institutions as well as in their respective proposals and objectives.

The Technological Institute of the Americas (ITLA)

The Technological Institute of the Americas (ITLA) is a public institution, founded in 2000 and authorized as a higher education technical institute by resolution no. 05-06 of July 18, 2006, issued by the National Council of Higher Education Science and Technology (CONESCyT). It is the only Dominican higher education institution specializing in short-cycle technological education. ITLA has won several awards for the prestige and quality of its offerings, including the National Quality Award granted by the Ministry of Public Administration of the country, becoming the first academic institution to receive this award.

ITLA has the mission of training technological professionals with high ethical values through innovative methodologies, thereby contributing to entrepreneurship and national development. Further, it implements a constructivist educational model based on practical learning. All academic programs have a hands-on approach that allows active learning. Laboratories and workshops are the center of the institution's pedagogical offerings, applying technology to education by integrating the various innovative tools emerging in industry.

ITLA is conceived of as a benchmark in higher technical training of the Dominican Republic. The institution has graduated more than 2,238 profes-

sionals, generating an impact on national, social, and economic development. Importantly, ITLA has a physical structure, a teaching staff of experts in each of the curriculum areas, and an administrative structure that guarantees the optimal functioning of the institution. ITLA also has the unique and specific mission of training professionals in technologies and applied sciences within a comprehensive approach that includes technical knowledge, ethical values, and entrepreneurship training. In addition, students are required to have taken 12 levels of English before graduation.

ITLA reported an enrollment of 2,727 students in the period May-August 2019, of whom 16% were women and 84% men. These students were distributed among eight higher technician programs: software development, information networks, mechatronic, automated manufacturing, multimedia, sound, security, and industrial design. In total, ITLA employs more than 184 professors, of whom 55% are full-time, 45% part-time (15% are women and 85% are men).

Enrollment of Foreign Students

In 2018, 43 foreign students were enrolled at ITLA from eight countries: 15 from Haiti, nine from the USA, eight from Venezuela, three from Colombia, two from Spain, and one each from Cuba, Japan and Australia. In 2019 the number reduced to 27, with seven from the US and Venezuela, four from Haiti, three from Paraguay, two from Colombia and Spain, and one from Argentina and Cuba.

Employability

At present, more than 88% of ITLA graduates are employed at the end of their study program. Further, their salaries tend to be above the market average, according to the employability report approved by the National Statistics Office (ONE) that spans 2006 to 2017.

Continuing Education

ITLA has more than 40 courses, workshops, and diplomas in areas related to technologies managed by the Department of Permanent Education. In

2018, 4,826 participants took advantage of these continuing education opportunities.

The institution also has a fully online training offer through its virtual platform, which in 2018 trained more than 300 people in areas related to technologies. Additionally, a main program led by ITLA is *Technological Teacher* through which it has achieved the training and digital literacy of more than 1,904 teachers of the national education system. This initiative was carried out together with the National Institute for Teacher Training and Training, INAFOCAM.

Extension Programs

ITLA has led and promoted important social impact projects, making considerable contributions to development in the Dominican Republic and specifically in the municipality of Boca Chica (where the campus is located). These projects have engaged more than 18,000 people to date through courses in the areas of technology and English language learning.

Scholarships

A scholarship program at ITLA is also of particular note, as it facilitates educational opportunities among low-income students. During 2018, 2,958 scholarships were awarded in total, 298 of which were for technical courses, 1,642 for English training, and 854 in software development and multimedia. These courses took place at ITLA Centers located in different provinces of the country.

ITLA's Steps Toward Internationalization

The internationalization of universities is a transversal process and one of the levers necessary for its transformation: the national and the international are complementary, never exclusive. Opening up to the world is not incompatible with positive impact on the territory where those same institutions are located, nor with a focus on vocation as a positive tool in national development.

In its strategic planning process of 2017-2020 (ITLA, 2017), ITLA has defined within its priorities in Axis 5 that it will: "*Project its professionals at na-*

tional and international levels; create exchange programs through alliances with national and international counterparts; and implement communication initiatives for international brand positioning” (ITLA, 2017, p.10). In that sense, different actions have been carried out aimed at fulfilling this great goal, among which we mention the following: strategic alliances, student mobility, teaching mobility, associations, academic activities, the IGLU 2016 Seminar, student participation in international competitions and events, participation of administrative staff in important international events, training in international programs, and curriculum internationalization (including academic reform, study program accreditation processes, and the International Certification Center that makes available more than 100 certifications).

ITLA has an International Relations department with the objective of promoting strategies and actions for the internationalization of the institution that facilitate the training of highly competitive professionals prepared to respond to the challenges of our societies. ITLA’s Academic Council approved an Academic Mobility Regulation for the department (resolution No. RCA / 003-2017- 8) which establishes guidelines for this process.

ITLA-IOHE

In 2018, ITLA assumed the Caribbean Regional Vice Presidency of the Inter-American Organization for Higher Education (IOHE) represented by its Rector, José Armando Tavarez. The main objectives of the institution at that time were to further its internationalization strategy, expand its network of collaboration with new institutions, and create joint actions to strengthen the quality and internationalization of HEIs in the Caribbean region.

ITLA also holds the current executive management of the IOHE Academic Program *Inter-American Space for Higher Technical and Technological Education (EIESTEC)*. As a strategic activity, ITLA coordinated the fifth edition of the EIESTEC Meeting in November 2018 in Punta Cana. The theme of the event was “Higher Technical Training: Integral, International and Digital”, and more than 60 participants were welcomed representing 10 countries,

with participants including government leaders, rectors, vice chancellors, academics, professors, representatives of national and international organizations, and representatives of the private sector.

The participants of the 2018 EIESTEC meeting were part of an exceptional two-day academic program where they participated in work sessions and presentations of practical cases and innovative proposals specifically addressing TTIs of the Americas. The Minister of Higher Education of the Dominican Republic, Ms. Alejandrina Germán, attended the meeting.

Another activity carried out by ITLA (taking into account the work plan of the Caribbean Regional Vice Presidency of the IOHE) was its Regional Assembly led by engineer José Armando Tavarez, Regional Vice President. In total, 39 people representing eight countries attended that assembly, which approved the Vice Presidency Action Plan and actions to be developed over the course of the year. This activity was carried out on May 16, 2019 at the ITLA Campus located in Boca Chica.

As a component of the IOHE Regional Vice Presidency, ITLA is sponsoring the execution of the research project *Internationalization of Technical and Technological Institutions of Higher Education of the Caribbean* with Boston College’s CIHE and engaging Hans de Wit and Miguel J. Escala as collaborators. As part of the project, we celebrated an internationalization workshop conducted by Hans de Wit with the participation of 25 representatives of seven Caribbean countries. Dr. de Wit presented a keynote speech titled *Introduction to internationalization and global learning: Implications, challenges and opportunities for Technological Institutions in the Caribbean*.

Main Reasons for the Internationalization of the Institution

At ITLA, we understand internationalization as a multidimensional issue that should be part of our agenda. We conceive of it as important for the promotion of academic quality and for the projection of the institution internationally. We want to diversify

the teaching and administrative staff and promote knowledge mobility and technology transfer. Within this framework, the internationalization of the curriculum is key so that everyone benefits from the process, and so that ITLA provides greater access to job and training opportunities for students and graduates alike.

Main Challenges in Implementing an Internationalization Strategy

As an institution committed to internationalization, we often face limitations such as financial constraints, lack of flexibility in government administrative processes, and the unavailability of international funds. The language barrier is another challenge that we have to face as well as the necessary integration of teachers. Although these are internal issues, they are challenges that prevent us from advancing at the expected speed.

In terms of student participation, we need to pursue new alliances to promote academic mobility, make the most of technological tools to facilitate academic mobility, and recruit teachers who are experts in technological areas for the purposes of knowledge transfer. Of course, both for the benefit of those who remain on campus, as well to support access and experience among foreign students, ITLA has to strengthen the internationalization of the curriculum and related processes and procedures.

Main Initiatives and Recommendations for Regional Cooperation in the Caribbean and to Improve the Internationalization of the Institution

As a participant in two networks of international technological institutions, and with links to national and international companies, ITLA assumes internationalization as a collective task at national, regional, and extra-regional levels with similar institutions.

We suggest strengthening the following actions to strengthen internationalization and its impacts on our countries, our institutions, and our students:

- a) Create initiatives that encourage cooperation between HEIs in the region
- b) Develop knowledge transfer programs among teachers
- c) Motivate the participation of teachers and students in cultural exchange programs through various initiatives
- d) Promote training for HEI leaders on issues of common interest
- e) Carry out integration programs for students: competitions, workshops, etc.
- f) Make a training offer to respond to the needs of the region
- g) Create a statistical database on the main academic indicators of the region
- h) Encourage the creation of peer networks
- i) Exchange of good practices

Internationalization is a task that we have to assume collectively, as part of our institutional duties, and as a fundamental component of the work of higher education institutions at all levels.

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Higher Academy of Aeronautical Sciences (ASCA)

The Academia Superior de Ciencias Aeronáuticas or Higher Academy of Aeronautical Sciences (ASCA) is a technical institute of higher studies created, sponsored, and directed by the Dominican Institute of Civil Aviation (IDAC). It is governed by Law 139-01 of Higher Education Science and Technology; by the provisions of IDAC and by the other laws, decrees and regulations that are applicable to its work; as well as by its organic statute, its regulations and resolutions. It was established to train qualified human resources for the provision of services in the aeronautical sector. It is located on the Prolongación Calle Route 66, Punta Caucedo, Santo Domingo Province in the Dominican Republic, near the International Airport of the Americas.

The main purpose of the ASCA is the development of academic programs at the higher technical level and of continuing education that guarantees formation and training in the aeronautical sciences. The ASCA grants titles of the superior technical level as well as continuing education certificates.

The ASCA specializes in aeronautical training programs, meeting high standards of safety and quality. It offers quality training to the international aeronautical community in the areas of air navigation, safety surveillance, flight standards, aeronautical management, and aeronautical law, among other programs. The Academy designs, develops, and provides a wide range of training according to the specific needs of its clients. A virtual platform is available for online training, through which the classroom experience can be recreated.

Mission

To train competent human resources for the Instituto Dominicano of Aviation Civil and the national and international aeronautics industry, in compliance with the required quality and safety standard.

Vision

Be a nationally and internationally leading institution in education and training, thereby serving the aeronautics industry, and characterized by academic excellence.

Vision

Senior Technician Aerodrome Air Traffic Controller, Higher Technician in Aeronautical Administration, and Continuing Education Courses.

ASCA Internationalization Activities

The ASCA has generated strategic alliances with national and international institutions with the purpose of: developing joint academic programs, delivery of academic programs, realization of research projects, faculty exchange, the provision of advising services, and development of training tailored to the needs of the customer.

Since 2011, ASCA has been training personnel from around 20 countries in different aeronautics programs. The feedback from participant countries with regard to the quality of the instruction that ASCA provides has been very positive. As a result, ASCA has continued with the promotion of training activities for the staff of the region. Indeed, ASCA has collaborated with various countries of the region in providing technical assistance through the exchange of best practices in training and program design. ASCA promotes continuing cooperation with the international aeronautical community to meet the training needs for the present and the future.

Further, the Academy supports continuously ICAO's initiatives for the benefit of the region. Since 2014, ASCA has participated in a working group of the ICAO program for the formation of the New Generation of Professionals of Aviation (NGAP).

ASCA has contributed positively to the NAMCAR (North America and the Caribbean) working group associated with the Civil Aviation Instruction Centers. In this group, the members discuss the main priorities of the region for the formation and training of the present and future generation of aviation professionals.

Internationalization of Technical and Technological Institutions of Higher Education in Colombia: The case of the “Bogotá Corporation of Technology”

María Concepción Alonso Salazar and Hernán Mauricio Chaves Ardila

Since Higher Education Institutions (HEIs) should promote the strengthening of education and thus the competitiveness and productivity of a country, we describe in this chapter the fundamental characteristics of higher education as well as national policies on internationalization, culminating in the challenges that a HEI focused on short-cycle programs must face to be able to develop an internationalization process and succeed in its implementation.

Context of Higher Education in Colombia

Higher education in Colombia is framed in the Constitution as a right of the person and as a public service with a social function. It empowers individuals to found educational establishments. It is framed in Law 115 of 1994 (Congress of the Republic of Colombia, 1994), which defines the norms for the public service of education, while Law 30 of 1992 regulates higher education itself and defines higher education as a continuous process for human development in a comprehensive way and as a public service

(Congress of the Republic of Colombia, 1992).

As of August 2018, there were 296 HEIs in Colombia, of which 28% were public and 72% private. Of the 83 public institutions, 40% are universities; 37% university institutions; 12% technological; and 11% technical professional (MEN, no date). Regarding the private institutions, 25% are universities; 48% university institutions; 17% technological; and 10% technical professional (MEN/SNIES, 2018).

Short-cycle Academic Programs in Colombia

University education (38.64 %) presents the greatest offer in the Colombian context, followed by courses for various specializations (25.26%). Likewise, short-cycle programs represented 19.08 % of all programs offered by the Colombian HEIs in 2018.

Overall student enrollment, according to Table No. 2, is highest in university education (64.68 %), while the enrollment in short-cycle programs is equivalent to 28.12% of the total enrollment.

Table No. 1. Enrollment and percentage participation by level of training, 2018

LEVEL OF EDUCATION	FACE-TO-FACE MODALITY	PERCENTAGE SHARE
PROFESSIONAL TECHNICIAN	78,614	3.26
TECHNOLOGICAL	598,754	24.86
ACADEMIC	1,557,594	64.68
SPECIALIZATION	98,625	4.10
MASTERS	68,229	2.83
DOCTORATE	6,225	0.26
TOTAL STUDENTS	2,408,041	100.00

SOURCE: MEN-SNIES, JUNE 2019 COURT, OWN ELABORATION

Similarly, Table 2 shows that the modality reflecting a greater number of students is the face-to-face environment, with an enrollment at the end of 2018 of 1,938,633 students (or 80.51% of total enrollment).

Table No. 2. Enrollment and percentage participation by modality, 2018

MODALITY	ENROLLMENT	PERCENTAGE SHARE
FACE TO FACE	1,938,633	80.51
DISTANCE	269,362	11.19
VIRTUAL	200,046	8.31
TOTAL STUDENTS	2,408,041	100.00

SOURCE: MEN-SNIES, JUNE 2019 COURT, OWN ELABORATION

Description of the Technological Corporation of Bogotá (CTB)

The Bogotá Corporation of Technology (CTB) was born on July 29, 1958. It is an institution of private higher education, not for profit, of an academic nature, and registered as a “technological institution.” Its legal status is endorsed by Resolution 6271 (dated May 1983) of the National Ministry of Education. Since 1996, it has managed an inter-institutional cooperation with the University of Applied and Environmental Sciences (UDCA), allowing students to pursue university studies of industrial chemistry and pharmacy management, including academic training, research and consulting.

CTB adopts the training of technologists through learning, experiential management, and the articulation of activities, according to the needs and expectations of stakeholders. It gives priority to values: respect, honesty, equity, solidarity and responsibility. Further, CTB seeks to be a HEI for technological and professional technical training; competent and comprehensive; linking students and society; with local, regional, national and international focus. It assumes as part of its substantive functions the training of entrepreneurial, comprehensive, and competent professionals in different areas of knowledge, contributing to the growth, development, and sustainability of society in the local, regional, national and international spheres, as expressed by its mission. The institution’s vision

statement proposes that it becomes a high-quality HEI by 2025, and one which develops entrepreneurial aptitude in its students by fulfilling its intentionality and mission.

As part of the CTB, the Business Development Center promotes entrepreneurship in the institutional community, through entrepreneurial culture, business creation, and promoting community entrepreneurship ideas. In addition, CTB offers four technological programs and one professional technician program with qualified registration: Industrial Chemistry RC 2205; Pharmacy Regency RC 2206; Health Business Management RC 54381; Management of Documentary and Archival Information Systems RC 54382; and Professional Technician in Process Development and Library Services RC 106271.

The teaching staff is composed of 31% of instructors with university education, 34% specialists, and 34% with a master degree. Two teachers currently receive institutional support for their doctorates at the University of Jaen (Spain) in alliance with UDCA.

Among the institution’s key policies are the promotion of academic excellence, human development, management and administration, financial sustainability, information and communication, inter-institutional relations, quality assurance, academic, welfare and financial student permanence, governance and good governance, and social responsibility.

The Technological Corporation of Bogotá has received the following acknowledgments:

- a) First position Professional and Technological Technical Institutions 2012 and 2013. Second place Professional and Technological Technical Institutions by social extension and employability of its graduates
- b) Recognition Institutional “Saber Pro”. Resolution No. 1992, February 02 2016 of the Ministry of National Education based on results of the Examination of the Quality of Higher Education, tests of generic and specific competences in 2014. Ministry of National Education
- c) Resolution 18735 December 10 2018, Students Results in Examination of the Quality of Higher Education, tests of generic and specific competences in 2017, Ministry of National Education

National Policies for Internationalization of Tertiary Education and the Role of TTIs

As expressed by Jamil Salmi, an international expert on reform of higher education in his article “The challenge of developing a policy of internationalization of higher education in Colombia” (MEN, 2014), the internationalization of higher education has become a fundamental factor in transforming the services offered by HEIs. As such, internationalization becomes a “requirement for all universities that aspire to prepare competent young people to work as global professionals and capable of living as global citizens” (MEN, 2014, p. 18).

Similarly, in the “Proposal of public policy for the excellence of higher education in Colombia in the peace scenario” (CESU, 2014), it is proposed that internationalization is the vital strategy to achieve an adequate articulation between public policy and the developments of the processes of globalization and knowledge, necessitating a focus on supporting HEIs in their internationalization processes. In this scheme, key support efforts have been the “organization of the Latin American and Caribbean Conference on the Internationalization of Higher Education, LACHEC; the creation of the National Bilingual Program; and the organization of mis-

sions and attendance at international education fair” (MEN, 2014, p. 115). Further, the National Accreditation Council (CNA)’s incorporation of internationalization as a factor for high quality in the accreditation process of academic programs and institutions is important to highlight.

Main Reasons to Internationalize

For the Technological Corporation of Bogotá, the internationalization of education plays a preponderant role in the development of its mission as an institution of higher education, becoming a transverse axis to the comprehensive work of the institution, as expressed in its Policy of Interculturality and Internationalization (Technological Corporation of Bogotá, 2013). That policy promotes the internationalization of higher education as a strategic, broad, permanent and dynamic process, with an intercultural and multicultural structure permeating its actions, ensuring its national and international positioning, generating greater quality, relevance, cooperation, solidarity, integration, and development commensurate with its intentionality and ethos.

It further allows for the generation of programs of academic quality, teachers with an international profile, bilateral research, and mobility of academic community members for knowledge exchange. It also aims to train professionals in technological higher education with high ethical and human values as well as with personal, professional competencies. Finally, at both the national and international levels academic excellence is sought through research, the relationship with the environment, social responsibility, and the preservation and conservation of the environment.

As a HEI of a technological nature, the Technological Corporation of Bogotá stands out for its internationalization process, based on innovation, adaptation and business, and social and industrial growth of the country. Concurrently, the Corporation seeks to strengthen spaces for entrepreneurship, social responsibility, joint projects with national locations and governmental and non-governmental institutions, and to promote regional work through inter-institutional cooperation

agreements.

To consolidate a policy of intercultural and inter-institutional relations will allow the comprehensive internationalization of the institution, including its academic research and extension offer at international level, positioning it as a leading technological institution in internationalization processes. This consolidation necessarily includes the generation of the culture of internationalization, strengthening of internationalization at home, expansion of inter-institutional cooperation agreements, an internationalized curriculum, joint research projects with foreign institutions, visiting professors and foreign students, and program of incentives and support for internationalization through mobility. With this approach, the institution assures the best benefit and result for improving the quality, relevance, and generation of skills in the institutional community, which is the reason (and benefit) to be associated with the institution.

The institution is strengthened through interculturality and internationalization in a multidimensional and multisectoral manner, from formation and training in internationalization, through the generation of an institutional culture of internationalization with an intercultural and multicultural approach. Other initiatives are:

- a) The generation of internationalization policies, plans and strategies
- b) The reactivation of the administration and operation of the office of inter-institutional and intercultural relations
- c) Evaluation processes and information systems of internationalization
- d) National and international academic mobility
- e) The internationalization of the curriculum, through bilingualism and multiculturalism, internationalization at home, subjects with international component, flexibility of the curriculum and credit system, double degree and joint programs
- f) Internationalization of research through joint projects, scientific events, research

networks, publications with international peer review

- g) Emphasis on networks with institutional projection at international level and the administration and management of agreements, networks and associations
- h) Interaction between interculturality and social responsibility and entrepreneurship

Internationalization Activities

CTB seeks international recognition through quality academic programs, teachers with recognized international profiles, joint research, mobility, and the promotion of interculturality and multiculturalism. The policy of Multiculturalism and Internationalization of the CTB, according to Agreement 444 (passed in 2013 by the Executive Council), defines the guidelines that consolidate inter-institutionality and intercultural culture (Technological Corporation of Bogota, 2013). These constitute it as transverse to mission processes and guide its positioning at the local, regional and international levels, developing its activities by:

Agreements, Memoranda of Understanding

As they define the framework of common relationships and actions conducive to promoting scientific and pedagogical cooperation, student exchange, and research and extension, the following active agreements are held:

- Inter-institutional cooperation between the CTB and the Colombo Bulgarian Alliance Foundation, Bogotá - Colombia
- Inter-institutional cooperation between the CTB and the Municipal University of Sao Caetano do Soul, Brazil
- Memorandum of Understanding for the development of entrepreneurship among Wadhvani Foundation and CTB
- Inter-institutional cooperation between CTB and the University of Strasbourg, Robert Schumann University Institute of Technology France
- Memorandum of Understanding between

the Technological University of León and the CTB

- Framework agreement for academic, scientific and cultural collaboration between the private universities of Panama and the network of HEIs of the Colombian Caribbean

Internationalization at Home, Interculturality Week

The iterative process of instituting comprehensive international education for students is shared during a semiannual presentation to the academic community. This includes events focusing on the socio-cultural aspects of different countries, and the event series boasts a participation of 80% of the academic community. Related programs include: Multicultural meeting, CTB multiculturalism, Year Colombia-France, Special events that have marked humanity, Russian culture: the other side of the world, and Colombian cinema.

International Guests

The institution welcomes international guests for the purpose of: a model of cooperation, teacher exchange, student exchange, academic mobility, joint research, and development of academic programs. This exchange is based on the interrelation between students and experts of internationalization in order to achieve positive developments in higher education. Guests have included: Adrián Bozzoletti, Argentina; Fabio Murguey, Venezuela; Guy Paradis, Canadá; and Daniel Vaz, Brazil.

Academic Mobility

Mobility allows students, research professors, and managers to improve and complement their training through national or international exchange and temporary placement in a new organization. This exchange may occur through internships, courses or short activities, international semester programs, international entrepreneurship, courses in a foreign language, exchange teacher programs, and other mobility opportunities. Students and teachers have completed international semesters at universities such as the Federal de Pelotas in Brazil, John F.

Kennedy in Buenos Aires, and Nacional de Cuyo in Mendoza, Argentina.

Other activities for the Promotion of the Culture of Interculturality and Internationalization

Finally, as member of the Asociación de Universidades de América Latina y el Caribe para la integración (AUALCPI) the Technological Corporation of Bogotá participates in the following activities: academic space for the development of research in terms of integration, through meetings and forums; Journey through Professional, Technical, Technological, and Colombian University Education, with French universities; development of academic programs for the internationalization of Vocational and Technological Technical Training in the commercial area (to obtain the double degree); and immersion programs at the English Center of the Jonquiere College, Ottawa, Canada.

Challenges to Implement an Internationalization Strategy

One of the main challenges that must be addressed to implement an adequate internationalization strategy is that of overcoming. This relates to an interaction between institutions of different languages, the bilingual barrier and the incorporation of bilingualism in curricular content, improved training processes in internationalization (with an emphasis on management issues and internationalization of the curriculum), and to thus overcoming the incipient development of the current internationalization of the curriculum.

Other challenges that must be dealt with to achieve an adequate implementation of internationalization at the institutional level have to do with:

- a) Achieving the consolidation of the culture of internationalization within various areas of the organization
- b) Including internationalization in the fundamental documents of the institution (Strategic Plan, Development Plan that prioritize the process of internationalization)

- c) Overcoming limited interest and knowledge of the subject by the institution officials
 - d) Achieving the implementation of a policy of International Relations and internationalization
 - e) Achieving greater institutional participation in national and international academic networks
 - f) Achieving greater articulation of the various instances of the internationalization process
 - g) Achieving greater linkages in internationalization of research processes
 - h) Improving mechanisms to disseminate achievements and projection activities at national and international levels
 - i) Strengthening the international vision in the degree final papers
 - j) Strengthening the operational structure of the Inter-institutional and Intercultural Relations Offices
 - k) Developing joint research with foreign institutions or peers
 - l) Achieving greater access to recognized research and international databases
 - m) Increasing the access to contacts and joint work for financing and experience in the development of research with international cooperation resources
- (relevant both nationally and internationally)
- 4) Seek the reduction of the costs of internationalization in research, mobility, and other areas
 - 5) Overcome inequality in support processes for strengthening internationalization among the various HEIs
 - 6) Strengthen government actions regarding internationalization
 - 7) Develop international research and publications in the various areas related to internationalization
 - 8) Strengthen the channels for cooperation between national and international HEIs
 - 9) Develop specific internationalization actions that address the particularities of TTIs
 - 10) Increase academic networks
 - 11) Achieve greater articulation between HEIs, companies, and non-governmental organizations.

Initiatives and Recommendations for Regional Cooperation in the Caribbean and to Improve the Internationalization of the Institution

Internationalization is one of the factors that has undoubtedly had a profound impact on the structuring of HEI action and activity. Therefore, in accordance with the characteristics, identity, nature, and mission of a given institution, internationalization can respond to the challenges of globalization by addressing quality and relevance in the context of the particular institutional niche.

HEIs should support and promote the internationalization of education in all its manifestations as a strategic, comprehensive, permanent, and dynamic process and within the framework of institutional mission, vision and values, which high-level HEIs must offer to their community. This would be a step towards ensuring positioning in the national and international context and thereby generating greater quality, relevance, cooperation, solidarity, integration, and development.

From the point of view of the institution and its relationship with the environment, the main challenges are to:

- 1) Overcome the lack of theoretical and practical development of internationalization for technical and professional technical institutions
- 2) Eliminate erroneous preconceptions around professional and technological technical training
- 3) Counteract the emergence of low-quality training institutions and distance training programs run by operators other than HEIs

Existing models of internationalization must be transformed in a way that responds creatively, permanently, and multisectorally to the challenges of the national and international context in higher education.

The Technological Corporation of Bogotá will aim for a culture of internationalization that focuses actions on the pursuit of multiculturalism and interculturality, where respect for the other, integration, cooperation, solidarity, sustainable human development, and respect for the environment are fundamental pillars. Internationalization must be integrated into the institutional education process, seeking the comprehensive education of the student in a relevant way, in correspondence with the local, regional, national, and international. This is reason why the curricula should be designed according to the nature and mission of the given institution, and attending to the knowledge and experience of the human being. The end result is an international perspective for the benefit of the academic community.

Further, it must interact with national and international higher education institutions, as well as with governmental entities, networks, and associations oriented to the achievement of the internationalization of the institutions, in accordance with the country-specific public policy influencing any HEI's internationalization.

HEIs should direct the management of internationalization towards compliance with policy, regulations, manuals, agreements, and other instruments necessary for the effective implementation of internationalization. Additionally, an international relations or internationalization office must carry out the evaluation and follow-up guaranteeing its effective implementation and compliance according to relevant competences and responsibilities.

HEIs should define the most appropriate lines of work according to their characteristics, level of training, mission, vision, and values, which will be defined through programs, projects, strategies, and activities, in accordance with their institutional educational projects.

Within the lines of work can be considered: institutional management for internationalization,

internationalization of the curriculum, mobility and exchange, internationalization at home, internationalization of research, and the export of educational services.

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The Internationalization of Technical and Technological Institutions in Costa Rica: the case of the “Universidad Técnica Nacional” (UTN)

Fernando Quesada Ramírez

After a broad description of higher education in Costa Rica, this chapter will present the level of commitment to internationalization at the National Technical University (UTN), a public TTI (and member of the National Council of Rectors of Costa Rica), together with four other public universities. Notably, within those discussions, there is a lack of attention to how internationalization is fostered through region-building processes, namely regionalism. The European Union has long been examined, but other regions have received little or scarce attention. I seek to interrogate if and how internationalization permeates from the global to the national levels through region-building projects: does regionalism accelerate, counterbalance, or mitigate the globalization of internationalization? Do South American regional responses to internationalization challenge Northern/Western hegemony? These questions open avenues for advancing research in internationalization as a phenomenon that plays out in multilayered governance frameworks.

Brief Description of the Costa Rican Higher Education System

Education in Costa Rica is based on the national constitution (Costa Rica, 1949), which established elementary education as free and compulsory. Likewise, that legal norm establishes the autonomy of the public universities of the state and in Articles 84 and 85 establishes a special fund to endow these institutions. Costa Rica, therefore, has taken up the issue of education as a fundamental right for its citizens. It allocates approximately 8% of GDP to finance education (OECD, 2018), of which 1.36 % of GDP corresponds

to higher education (Programa Estado de la Educación, 2019).

The norms of Costa Rican higher education make a distinction between university education, which refers to levels 6, 7 and 8 of the UNESCO International Standard Classification of Education (ISCED), and “para-university” education (level 5). Currently, there are five state universities, 54 private universities, two state para-university institutions and 24 active private para-university institutions in the country. The public universities are represented by CONARE, the private universities regulated by the National Council of Private Higher Education (CONESUP), and the para-university institutions governed by the Higher Education Council. In addition, there are five universities that operate under international agreements (CONESUP, 2019; Higher Education Council Republic of Costa Rica, 2019). Universities can offer all levels of higher education (5, 6, 7 and 8) with the characteristic of issuing two different diplomas at level 6: the baccalaureate and “licenciatura” degrees. The para-university institutions can only offer programs that correspond to level 5. Graduates from level 5 receive a “diplomado” or a “profesorado”, the latter name referring to graduates of short programs providing teacher training.

CONARE (2018) reports that in 2017 221,291 students enrolled in higher education institutions; 25,637 were enrolled in short-cycle programs (reflected as para-university students), which represented 11.58% of total enrollment. Further, 60.82% of para-university enrollment corresponded to female students, well above the 54.74% that female students represented in overall higher education enrollment.

The chapter dedicated to higher education in the

Sexto Informe Estado de la Nación [Sixth State of Education Report] raises the need for greater coordination in the sector. Specifically, it highlights the need for a state policy on higher education, insists on the need for greater coverage and quality, and on greater supervision by the state of private institutions (Programa Estado de la Nación, 2017). In that context and under the auspices of a governing regulation, TTIs are developed.

Brief Introduction to the Para-University Institutions of Costa Rica

The offer of para-university programs in Costa Rica is not limited to the 26 institutions (two public and 24 private) to which we have referred as TTIs; universities can also offer para-university studies culminating in a “diploma” or a “profesorado.” That is the case of UTN, which provides short-cycle programs culminating in a “diploma,” and of the University of Distance Education (UNED), which offers programs leading to a “profesorado.” The UTN also offers a program that culminates in a “profesorado.”

In the country’s education scheme, technical education is promoted in order to prepare the necessary human resources for labor demand and is taught in three modalities. Technical Professional Education offered by the MEP is a form of diversified education cycle; vocational training is the non-formal modality and is offered by the National Learning Institute (INA); and the third modality is university technical education (para-university).

The *Sexto Informe Estado de la Nación [Sixth State of Education Report]* expresses a dissatisfaction with the achievements of this latter educational level (Programa Estado de la Nación, 2017).

An exhaustive investigation into the institutions and the academic offer at the para-university level showed that the objectives of the law that created it have not been met. The para-university education is currently characterized by a very low coverage (less than 8,000 enrolled students), poor infrastructure and limited academic offerings. Three areas concentrate just over 55% of all graduates (administration and accounting, medical specialties and computing and in-

formation technology) (p. 249).

About the National Technical University

The UTN is the youngest of the public universities of Costa Rica. It was created through the *Ley Orgánica de la Universidad Nacional Técnica [Organic Law of the National Technical University]*, No. 8638 of June 4, 2008 (Costa Rica, 2008), with the purpose of “paying attention to the technical training needs that the country requires, in all higher education levels.” UTN offers the formal modality of technical higher education (para-university) and was created to articulate the model of technical education in the country. As a peculiarity, the university was born as a result of the legal merger of six institutions of technical higher education, all of them with long academic experience and a valuable historical trajectory, which facilitated accelerating the process of initial academic integration of the university, and allowed for a wide and diversified educational offer. Only six months after the approval of our founding law, as of January 2009 enrollment began in 35 “diplomado” (level 5) programs in multiple areas. This served as precursor to the design and opening of university baccalaureate and “licenciaturas” tracks (level 6). Two public university colleges, para-university institutions, were left out of the founding law that created the UTN.

The UTN was born as a new educational option to contribute to overcoming two large gaps (among other purposes). On the one hand, the creation of UTN sought to address the endemic separation between traditional technical education and university education, which is the case in Costa Rica as in most of Latin America. These separate levels may be seen as “watertight compartments”, which have lacked articulation means and effective and fruitful integration oriented to the needs of development. On the other hand, the traditional rupture between university and industry (or between educational institutions and the real world of work and business) has constituted a true missing link in the chain of inclusive development and innovative productive transformation in Latin America.

At present, UTN has an expanded educational

offer and has advanced towards a technical education increasingly linked to the needs of the productive sector (industry). For these reasons, the current enrollment is approximately 14,000 students, most of whom attend para-university programs, demonstrating the relevance of the university.

Also, due to the openness of the university's innovative admission policies, approximately 25% of the student population is first generation. In the same mode, there is an emphasis on gender equity: the composition of the university's enrollment is 56.45% percent women and 43.56% percent men. In the *Séptimo informe estado de la educación [Seventh*

State of Education Report] (Program *Estado de la Nación, 2019*) a vignette is dedicated to highlight the “introductory code of the UTN to improve the access and permanence of its students” as a good practice (p. 177).

These facts, together with others, show that today the university has achieved the task for which it was created, and that it advances daily in its particular goal of satisfying the need for technical education as required in the country. Table 1, with data through 2018, reflects UTN graduations and reveals the importance of the short-cycle programs (Diplomas) as well as the institution's status as a TTI.

Table 1. Titles Awarded by Headquarters and Academic Level, 2018

Sede	Diplomado	Bachillerato	Bachillerato	Maestria	Total
Atenas	174	86	31		291
Central	658	435	40		1133
Centro de Formacion	166	116	17	20	319
Guanacaste	153	115	55		323
Pacífico	274	227	42		543
San Carlos	230	135	27		392
Total general					3001

Fuente: Registro Universitario, datos de graduados 2018, febrero 2019

National policies for Internationalization of Tertiary Education.

Familiar complaints about the lack of a comprehensive state policy regarding higher education, reflected in both 2017 and 2019 reports on the state of education (the State of the Nation Program, 2017 and 2019), are indicative of there also being an absence of state policy for internationalization. It is worth mentioning that the 2017 report employs the word “internationalization” only four times; it is used on one occasion to emphasize that Costa Rica is the largest host country of internationally mobile North American students in Latin America. The

2019 document, which only once mentions the term “internationalization,” does so to refer to an accreditation achieved by the Technological Institute of Costa Rica with a French accreditor. These areas are of course part of university work, but do not reflect the main themes of relevant public policy or the scope of these valuable and comprehensive education reports.

Indeed, Aguilar-Castillo and Riveros-Angarita (2017) describe and value the efforts of the University of Costa Rica in its internationalization activities and processes, though they call for more attention to the lack of systematization and dispersion. What

the authors describe also represents the landscape at other public universities as well as many private institutions.

Main Reasons Why it is Important and Relevant for the Institution to Internationalize

From the outset, the internationalization of UTN has been based on the axis of continuous quality improvement across different component functions. It is vital that the university must be situated in global context, and rather than being isolated in the development of its substantive areas, must analyze best practices that are being implemented at the international level. These practices may then be contextualized and adapted for our reality.

Likewise, the pursuit of quality will lead to a prestigious university; one whose graduates will be distinguished in society given their knowledge and skills relevant for the global environment. For academics, the examination of global context also indicates ways in which teaching and research can be improved across different subject areas.

Within the context of technical education, it is extremely important to have an internationalized institution, since it will serve to better fulfill its fundamental goal of eliminating the gap between private companies and higher education to better train professionals. Therefore, with a greater understanding of the institutional actors in the international context, there will be increasingly fewer challenges in university-company collaborations, which historically have been difficult to achieve.

Another important reason for the UTN to undertake internationalization is to cooperate with other institutions of higher education. Although it is unequivocal to think that international development must be so, reality denotes certain difficulties in working towards a great international alliance. In this way, internationalization also indicates that universities open doors to joint work, strengthening joint capacities, without pre-conceived notions but rather cooperating in the development of joint knowledge that can favor nations. We seek to coordinate, integrate, and look for systemic actions that

strengthen institutional efforts, and in turn become country-wide efforts.

Current Internationalization Activities at UTN

Since its creation in 2008, UTN authorities have visualized the need to create an office responsible for channeling international opportunities and for the international development of the university. That is why the External Cooperation Directorate has operated since 2010 as the unit responsible for guiding the internationalization process of the university.

When this new office started working, since the university was recently created and unknown in the international arena, the first step was to develop international partnerships. Thus the university began to take part in various international cooperation networks and university organizations that could facilitate exchange with partners.

Participation in networks such as the Inter-American Organization for Higher Education (IOHE), the Central American Higher Council, Universia, and others, provided the first step for the development of internationalization activities. Based on the initial connections with different universities, special emphasis was placed on faculty and administrative exchange experiences. In addition, these experiences have also facilitated the development of student mobility experiences (incoming and outgoing), which have prompted interest in internationalization.

In turn, various activities emerged as part of ongoing institutional development; these included responses from different sectors of the university interested in greater exposure to the international environment. Relevant activities included visits of international delegations, multicultural fairs, talks about scholarship opportunities abroad, and visits of international experts to short events. Other initiatives are currently being developed.

It should be noted that there is strong annual participation of students, academics, and administrators in international activities. During 2018, approximately 300 people from the university visited other countries, of whom 111 were students partici-

pating in international academic and cultural tours, as well as various student networks and training forums.

Likewise, two programs of institutional scope, the University Mobility Program and the Academic Professionalization Program, have been created by the External Cooperation Directorate. Both programs seek to develop staff and faculty at different university levels with experiences abroad, so that good practices can be replicated upon return to the university.

In summary, the internationalization of UTN has been developed on different axes since its creation. However, a strategy that guides and maximizes relevant development for the institution has not existed to date.

Main Challenges to Implement a Strategy

As described above, the university has pursued important developments in this area, though it has been demonstrated that the described development lacks a strategic approach spanning the whole university. Such an approach would allow for the improvement of the existing internationalization process.

For at least two years, the External Cooperation Directorate has been in the process of thinking about an internationalization strategy that amplifies its development at the institutional level. This reflection has identified some specific challenges that must be solved in the near future in order to achieve a policy of internationalization across the institution.

As a first point, we highlight the appropriation of the issue of internationalization at different university levels and the respective training mechanisms. It has been noted that, although many administrators say that they know what internationalization is, they actually have limited knowledge of the subject, which restricts the scope of application within their respective daily work. In order to eliminate this barrier, it is necessary to begin to train academics and administrative staff on the scope of internationalization and therefore provide a general

understanding of what internationalization is and how the university perceives it.

The above undoubtedly influences the challenge of thinking about each of the processes that the university undertakes from an internationalization point of view. This is an additional limitation that must be overcome in order to establish an institutional strategy, since undoubtedly, a change in the various processes is required for the university to be thought of as international. With a general sensitization on the subject, there will be less reluctance towards change in processes and in the understanding that international dynamics will require exceptions on national dynamics; some specific processes should become more flexible.

Additionally, UTN has a fundamental challenge in its recent creation. Although this can also be seen as a benefit, it is important to note that there is still active development of various areas of the university, and given this circumstance it is sometimes difficult to think of adding on an institutional strategy of internationalization. While this dynamic is not why the internationalization process has been paralyzed, it is important to have certain parameters defined to think about other transversal processes. Undoubtedly the challenges posed require time and effort to be overcome, however, there is a willingness of all institutional actors, including the highest authorities, to create better mechanisms to develop internationalization.

Main Initiatives and Recommendations for Regional Cooperation in the Caribbean and to Improve the Internationalization of the Institution

Internationalization in Latin America presents many challenges and particularities that must be overcome, as in other regions of the world, in order to achieve effectiveness. Mainly, the development of public policies that facilitate and promote internationalization within each country, prioritizing the issue within the higher education world, could mean a great advance for our region.

Additionally, and as institutions of higher education, we must overcome the suspicion and selfishness in joint work that sometimes makes us look down on peer institutions in our country or region. By overcoming this attitude, a future will be seen with more incentive scenarios in the intra-regional internationalization of Latin America and the Caribbean. These scenarios are already reality in other regions of the world, but within our reality are inconceivable.

The initiatives to be developed, which are required by our region, necessitate enormous work but are not far removed from those already in existence across other regions of the world. As a first step, it is a priority to think about curricular harmonization processes for Latin America and the Caribbean, which are absent but are prerequisite for mobility processes, curricular flexibility and others. Given this, certain advances have already been seen from the IOHE and UDUAL, with projects focused on the creation of a common area of higher education in the region. Additionally, the Central American Superior Council has created the Common Qualifications Framework of Central America and the Dominican Republic. Cross-national advances in the approval of National Qualifications Frames contribute to these purposes.

Not least, it is worth highlighting that respect for the diversity of cultures and subcultures within our region is necessary to achieve real progress in our joint work. Without respecting these singularities, it is difficult to move forward together. Further, this heterogeneity is an important characteristic and asset of the region.

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The Case of Short-Cycle Higher Education Programs in Cuba

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This chapter describes the process carried out by the central body of the Ministry of Higher Education of Cuba with the purpose of responding to a proposal that has its antecedents in studies carried out for twenty years by groups of Cuban experts. That work has borne fruit since 2015 in various transformations of higher education, specifically the possibility of offering young people a new way to access higher education through short-cycle training programs. The methodology used in Cuba to achieve the approval of a policy public for the creation of short-cycle higher education (ESCC in Spanish) is discussed here. We reflect on the actions undertaken to begin this policy's institutionalization and implementation, as well as the challenge it represents for all. Finally, this chapter discusses the role of international collaboration with the Association of Directors of University Institutes of Technology (ADIUT) of France for the design of these programs as well as the projection of their international dimension.

The Ministry of Higher Education of the Republic of Cuba and Short-cycle Higher Education.

Cuban higher education is made up of 50 institutions of higher education: 22 universities, three science, technology and innovation entities attached to the Ministry of Higher Education, 16 medical universities, and 12 universities and institutes of other organizations. There are 240, 813 students enrolled in the aforementioned institutions, who pursue bachelor's degrees or the equivalent. In addition, more than 300,000 students access master's degrees, doctorates, and other forms of postgraduate improvement. Among the sustainable development

goals of the 2030 agenda, the formulation of the number 4 stands out: "Ensure inclusive, equitable and quality education and promote lifelong learning opportunities for all" (ECLAC 2016). The goals of this objective for 2030 include ensuring equal access of men and women to quality technical, professional and superior training; as well as increasing the number of young people and adults with "the necessary skills, particularly technical and professional skills, to access employment, decent work and entrepreneurship" (ECLAC 2016, p. 15).

The main executives and the advisory staff of the Ministry of Higher Education (MES) of the Republic of Cuba, together with university pedagogical groups, have undertaken a set of transformations that promote a more diversified approach and higher levels of quality and quantity in higher education admission among young people and adults. Further, there has been emphasis on developing a system of continuous training for comprehensive and relevant professionals, covering undergraduate studies, preparation for employment in the first years after graduation, and postgraduate education. These aims are in line with the aforementioned goal of sustainable development.

Both studies and research have been carried out to take more solid steps with scientific foundations; these include inquiries made around the paths for the diversification of higher education systems. Findings pointed towards the creation and existence in several countries of tertiary education institutions other than traditional universities or non-university tertiary education (ETNU) in which short-cycle programs were offered. The programs in question lasted no more than three years, offered a practical and vocational approach, and provided new didactic

methods that responded to the massification of higher education. Further, they met demands of the labor market in the shortest time possible (Mikhail, 2008; Scheele, 2009; Benítez, Hernández and Pich, 2016).

The International Standard Classification of Education (ISCED) constitutes a frame of reference for collecting and presenting national and international statistics and for ordering educational programs and their respective certifications by levels of education and fields of study. It was created by UNESCO in the 1970s, was revised in 1997 and again in 2011. That latter version contains more precise definitions and new categories of education levels. Level 5 defines short-cycle tertiary education, which is the lowest level of tertiary education, aimed at acquiring professional knowledge, skills and competencies within a maximum period of three years to access employment in specific occupations. Relevant programs include predominantly practical components and can also facilitate entrance to other tertiary education programs (UNESCO, 2013).

These results indicated the creation of a national working group in the central agency of MES to prepare a proposal for this level in Cuban higher education. Here, we discuss the methodology used from 2015 to the present to achieve approval of that proposal as the basis for a Country Policy. Short-cycle Higher Education (ESCC) is now a subsystem of Cuban higher education, and we discuss the actions undertaken to begin its institutionalization and implementation.

Development of Short-Cycle Programs in Cuba

The advantages of diversifying Cuban higher education by including a new program level have been studied since 1997. In that year, the person in charge of the Ministry of Higher Education commissioned an interdisciplinary group of experts from MES and the University of Havana (UH) to analyze trends in higher education with a view to the 21st century, and in preparation for the Cuban delegation's participation in the UNESCO world conference in Paris. As one of the results of this study, the advantage of cre-

ating a new level in Cuban tertiary education was brought to the attention of the MES.

Study on the possibility of creating that level of higher education was restarted in 2014 at the request of First Deputy Minister Dr. José Ramón Saborido Loidi, which resulted in the formation of a working group. This body was composed of advisors from the MES and professors of the UH and the Technological University of Havana José Antonio Echeverría (CUJAE), who revisited the international panorama and relevant background in Cuba.

In 2015, the horizon of the changes required by Cuban higher education was broadened when the then Minister of Higher Education, Dr. Rodolfo Alarcón Ortiz, created a commission made up of vice ministers, advisers to the DFP, from other MES departments and experts from the UH, CUJAE and the Agrarian University of Havana (UNAH) to propose the transformations that should be carried out in the training of professionals in higher education. These were outlined in the document *Policy for the improvement of the system of continuous training of Cuban professionals* as a strategic guide for the changes that have been subsequently implemented.

Initial Actions of the MES

- 1) The implementation of the strategic actions outlined in the aforementioned document advised the creation of temporary working groups (GTT) in the DFP and among them the first was dedicated to the creation of the new level
- 2) Initially the group had a "core" whose mission was to prepare the draft public policy document and the base document for the preparation of the curricula
- 3) Later it was expanded with other specialists appointed by the UH, CUJAE, UNAH and the Ministry of Education (Mined) to discuss the documents prepared and make recommendations. In this commission several versions of the projects were discussed, including "Policy for the creation of the level of non-university higher education" and "Base document for the preparation of curricula for non-university higher education programs"

Expansion of Collaborative Actions with other National Organizations

As the resulting policy required the approval of the top management of the country, at a meeting held in the Executive Committee of the Council of Ministers (CECM) during the 2015-2016 academic year, it was agreed to create a GTT, chaired by the MES and constituted by representatives of several national organizations. The following actions were carried out:

- 1) The TWG focused on the elaboration of the draft policy with the structure of the document: Introduction and background, diagnosis, policy, economic valuation, possible risks, goals and indicators, legal norms, implantation schedule
- 2) At this stage it was decided to identify the level as short-cycle higher education; this retains recognition of “higher education” status in Cuba while incorporating the term “short-cycle” used by UNESCO
- 3) Five GTT meetings were held between October 2015 and January 2016, in which a total of 11 agreements were adopted, aimed at fulfilling commitments by the organizations in the group and integrating the assessments, opinions and suggestions of participants. During these meetings several international experiences were analyzed, including training courses developed by various Cuban organizations
- 4) At the same time, work continued on different versions of the draft base document, with the final version titled “Base document for the design of curricula for short-cycle higher education”

Advice from the Association of Directors of University Technology Institutes (ADIUT) of France

As a result of the Action Plan concerning cooperation in higher education between the Ministry of National Education, Higher Education, and Research of the French Republic and the MES of the Republic of

Cuba, which was signed in Paris on October 30, 2015, it was agreed to collaborate with and incorporate the advice of ADIUT executives regarding the nascent ESCC project in Cuba.

In France, institutes of technology (IUTs) are part of the university system, but they are distinguished by offering two-year short and practical courses that provide knowledge closely linked to the demands of the labor market (OECD, 2005). The steps that were followed in the Cuban case were:

- 1) Preparation of the administrative agreement project between the Ministry of National Education, Higher Education and Research of the French Republic and the MES of the Republic of Cuba about cooperation in the field of short-cycle higher education, which was finally signed by the parties in 2018, although collaborative actions were carried out based on the 2015 Action Plan
- 2) Concretion of the cooperation actions in different ways, including an initial meeting in December 2015 between executives of the IUTs of Le Havre and Saint Nazarie with members of the GTT and the Directorate of DFP in Havana for exchange about French experiences in the IUTs and the Cuban project to start the ESCC; participation of French executives in the International University Congress 2016; a visit of the Cuban delegation of the DFP to the IUTs of Le Havre and Saint Nazarie in November 2016 with the aim of broadening their knowledge and experiences on the short-cycle higher studies in the IUTs of France; in June 2017, a mission of seven experts of the ADIUT to Havana with the aim of working on training programs selected from the IUT (tourism, information technology and agronomy) with a view to adapting these for the ESCC in Cuba, as well as promotion of exchanges between French experts, managers of selected Cuban universities, and representatives of the Gaviota tourism group; the development of an ESCC workshop within the framework of the International University Congress 2018, organized jointly between ADIUT and DFP, with the participation of the European Association

of Institutions on Higher Education (EURASHE), an association that represents the polytechnic institutions and schools of higher education in Europe (the exchange was intended to support analysis of the development of technological higher education as an instrument of successful labor insertion for youth; privilege exchanges on educational policies of the sector in the different participating countries, as well as the good practices already implemented. In this workshop, in addition to presentations by directors of French IUTs and discussion by Cuban delegates and guests about translating existing Cuban training at the upper middle level to the ESCC level, there were presentations of ministerial representatives and institutional network representatives from Mexico and Colombia); a visit of MES executives to French Technological Institutes to coordinate the development of the mixed commission Cuba-France set for May 2019 and exchange among executives and professors of new Cuban programs designed with French consultation; the development of the Cuba-France joint commission for the development of ESCC in Cuba, including exchanges with Cuban teachers working on the design of programs related to tourism, commerce, logistics and information technology (exchange initiatives for Cuban teachers to visit French institutes were planned, including the delivery of teaching literature and computer equipment to support emerging programs); and the projection of internationalization in short-cycle higher education training programs: these nascent Cuban programs have been developed under the auspices of international collaboration, specifically in tandem with the French ADIUT.

This collaboration has contributed to designing the international dimension of ESCC through a group of strategies, among which are:

- 1) Academic exchange with international partners with emphasis on student and teacher

mobility

- 2) Recruitment of foreign students, mainly from Latin America, the Caribbean, and Africa to pursue these programs
- 3) Promotion of short-cycle programs as offers for the export of academic services
- 4) Use of international literature as bibliographic material, as well as case studies of international contexts
- 5) Study of foreign languages facilitating the obtaining of language certificates
- 6) Offer programs in innovative ways (online, hybrid) with intensive use of information technologies and communications.

Process Presentation, Discussion and Approval of Policy Document Draft

On April 30, 2016, the document draft was presented by the national director of the DFP at a meeting chaired by Miguel Díaz-Canel Bermúdez, who on that date served as First Vice President of the State and Ministers Councils. Valuable opinions and suggestions were offered about the policy in development. From that date, the document continued to be refined pending presentation to the top authorities of the country. The final version of the policy was circulated between September and October 2017.

After receiving the opinions and recommendations of different national offices and offices of the central administration of the Cuban State (OACEs), in January 2018 a conciliation was made among each of the proposals with the DFP of the MES, from which a new version of the draft policy document was derived. In February 2018, the policy on the creation of ESCC in Cuba was approved by the top authorities of the country.

Start of ESCC Implementation

After the policy was approved, the corresponding steps were taken to elaborate the legal norms that formalize the institutionalization of the new level and designate the MES as the relevant governing body. Under the direction of the Executive Committee of the Council of Ministers and in coordination

with the Ministry of Justice (MoJ) of Cuba, the following legal documents were proposed:

- a) Draft Decree Law
- b) Draft Resolution of the Minister of Higher Education
- c) Draft Resolution of the Minister of Labor and Social Security

In parallel, the National Commissions responsible for designing the curricula for each of the training programs requested by the agencies (and intended to start in September 2018 per the approved policy), worked on guiding documents drawing from courses of training already in place at the higher middle level. These programs were going to be transformed into ESCC.

A workshop was organized and developed with the leadership of the DFP, gathering together representatives of the agencies and institutions responsible for developing course designs. This workshop also included other national organizations that had shown interest in joining the ESCC beginning in the 2019-2020 academic year.

From the DFP and, in coordination with the governing centers, public defenses of each of the training programs were planned and carried out to present and discuss the curricular designs conceived by the commissions. For its realization, courts chaired by the vice-chancellors for teaching or training of the governing centers were formed, advisers of the DFP were appointed for the revision and methodological assessment of the documents, and opponents of the employers' organizations were invited to evaluate the relevance of curricular designs. After making the adjustments that were agreed upon in the acts of defense, final versions were submitted for the approval of the Minister of Higher Education.

Between June and September 2018, the new demands of the OACEs were presented based on national, provincial, or territorial needs to propose training programs to be implemented in the 2019-2020 academic year. In the Cuban experience, unlike other contexts consulted, new institutions providing short-cycle programs are not created, but

rather existing universities manage them as part of their faculties' training offer. Another difference is that the programs that have been designed and implemented cover not only technological knowledge areas (such as programs in the fields of health, sports, and teacher training for the basic secondary level) but are based on strongly held beliefs about the demands of the economic and social development of the country.

The implementation of the ESCC subsystem implies a real challenge for the professional training system as it constitutes a new level within universities and other institutions of higher education. In the experiences studied so far (or based on the advice provided by French IUT experts), there is no comparable example to the Cuban model, for example systems offering training for basic secondary teachers and health technologists. These fields have specific needs but are not supplied with Cuban middle technical or university graduates of sufficient quantity or quality.

The responsibilities shared between universities, organizations, companies, and entities in the development of training constitute a requirement for the achievement of quality and relevance. This implies the joint contribution of human, financial, and material resources that encompass various facilities, workshops, laboratories, and scenarios comprising the spheres of action of future graduates.

The constant search for essential content being taught and learned in short-cycle higher education must ensure a rational differentiation. In short, the level of average technician graduating from an ESCC program must be aligned with the ninth grade graduates entering programs, and also with related university programs that may be pursued by some ESCC graduates.

The following Short-cycle Higher Education Training Programs were initiated in 2018-2019:

- 15 Higher Health Technician
- 8 Basic Secondary Teachers
- 1 Senior Technician in Network Administration and Computer Security
- 1 Higher Customs Technician

In the 2019-2020 academic year, the following programs were added:

- In the area of Health:
 - o Senior Technician in Surveillance and Vector Control
 - o Senior Technician in Clinical Neurophysiology
- In teacher training:
 - o Professor of Art Education for Basic Secondary

Moving forward, new programs are planned in the Higher Technician in Commerce, the Higher Technician in Tourism Assistance (at the request of the Tourism System), the Higher Technician in Logistics (at the request of several agencies), and the Higher Technician in Sports Coaching (at the request of the National Sports Institute Physical Education and Recreation (INDER)). All of these programs will begin in the blended modality, with captive enrollment for workers of the sectors in question.

The official enrollment for the 2018-2019 academic year was 3,371 students, which should increase as the capacities in all universities have subsequently been increased, and in light of the new programs being designed. For the 2020-2021 academic year, between 18 and 20 short-cycle training programs related to tourism, construction, justice, metrology, document management, agronomy, transportation, geology, audit, hydrology, tax administration, and development are being requested by various agencies.

National Policies for the Internationalization of Tertiary Education

The internationalization of higher education is an indissoluble part of the strategic process of the MES. Within the main lines of work, it is intended to respond to government commitments regarding international collaboration and interuniversity exchanges, project management and donations that favor university infrastructure for the development of university processes, and international scholarship management that allows greater preparation of the cloister with emphasis on doctoral and postdoctoral

training. Other aspects of interest are the attention to foreign students, the management of international agreements that institutionalize international collaboration, as well as academic and student mobility and the export of international academic services. All HEIs address these areas in their daily work.

Importance of Internationalization in ESCC Process

The continuous research carried out in response to the initial MES request for study determined several approaches to the diversification of higher education systems. These pointed towards the creation and existence in several countries of tertiary education institutions different from traditional universities; this finding led to the proposal to include the level of short-cycle higher education in Cuba as part of the improvement of the system of continuous training of Cuban professionals.

The advice of the Association of Directors of University Institutes of Technology (ADIUT) of France has been a decisive factor in the development of short-cycle programs in Cuba, which initially focused on the design of four programs. The programs satisfy the particularities of the demands of national economic and social development, but the collaboration with ADIUT also assures a close alignment with the standards of international short-cycle higher education. The projection of the international dimension has also been significant: the new short-cycle initiatives aim to allow the access of students from other countries and systematic updating based on the most advanced programs worldwide.

Main Initiatives and Recommendations for Regional Cooperation in the Caribbean and to Improve the Internationalization of Institutions

- Promote visits to Cuba (and the MES) of officials and executives of HEIs in the region to carry out collaborative actions
- Stimulate and support bilateral cooperation between HEIs in the region, in order to enhance the levels of cooperation and academic exchange achieved.

- Encourage meetings between rectors of universities in the region
- Continue to favor scientific cooperation and academic exchange, as well as joint participation in academic networks and international projects
- Continue to participate in scholarship calls as a complementary mechanism to promote the improvement of higher education professionals
- Maximize the mobility of researchers and university professors
- Promote the academic services of the MES for international undergraduate and postgraduate activities, and favor technical assistance actions with the institutions of the Caribbean region.

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Internationalization of Technical and Technological Institutions of Higher Education in the Caribbean, Concluding Observations and Recommendations

Hans de Wit and Miguel J. Escala

In this study we have provided an overview of the development of internationalization in higher education, the specific context of the Caribbean region, and its technical and technological institutions of higher education. We have presented case studies from Colombia, Costa Rica, Cuba, the Dominican Republic, and Haiti, describing and analyzing the state of (as well as challenges and opportunities among) these types of institutions, using institutional case studies in those countries. As described in the introductory chapter, internationalization as a concept and strategic agenda is a relatively new but broad and varied phenomenon, driven by a dynamic combination of political, economic, socio-cultural, and academic rationales and stakeholders. There is

not one single model that drives internationalization. This implies that in the Caribbean region and in technical and technological institutions, internationalization is driven by different rationales and will have different objectives, approaches, and structures than in other types of HEIs and in other parts of the world. In this concluding chapter we provide some general observations and make some specific recommendations on how in the Caribbean region these types of institutions can enhance their internationalization strategy.

The Caribbean Region and its Higher Education

Although we accept diversity, confusion, and even

different senses of belonging to understand what the Caribbean is, we use, as described in chapter two, the following definition of UNICA as the framework for our study:

the geographical area that includes the islands of the Antilles and the coastal areas of the countries surrounding the Caribbean Sea and the Gulf of Mexico, including Central America and the northern region of South America and the Guyana. Therefore, the Caribbean is an area of ethnic, cultural and political diversity that facilitates cooperation in a wide range of educational projects (UNICA, 2010).

Internationalization, as was referred to in the introductory chapter, is still a rather westernized, largely Anglo-Saxon, and predominantly English-speaking paradigm, with most scholarly and public attention with respect to internationalization in higher education focused on the Western world. The Caribbean region has a diverse import of higher education systems: British, Dutch, French, Spanish, and more recently American. As described in chapter two, tertiary education in the Caribbean has the longest history in the Americas since colonization began in the region, and indeed Spaniards began to found universities early on in this process. The first institution of higher education in America (Harvard) was founded in 1636, and in the English Caribbean it took almost two more centuries. In other “Caribbeans” the foundation of universities was even later. The Netherlands and France contributed to the formation of new systems, which were small and had their own characteristics. Although the influence of the former colonizing country is reflected in the diversity of systems, each country has been building its own system with new external influences from the United States, and even from France, especially in the conception of short-cycle programs.

Many of each country’s elite have been trained in the higher education systems of these colonial powers, and still one can observe an outward mobility trend to these colonial states and dependence on their funding, teaching and learning, structures and cultures, and quality assurance. This has limited the

development of an own research culture and capacity. As a consequence, it also has limited inner-regional cooperation and growth and ongoing dependence in different colonial directions. Europe and North America have been dominant in influencing and controlling higher education development in the Caribbean region. For that reason, in studying the internationalization of TTIs in the Caribbean, it is relevant to address the question: are institutions, countries, and regions simply mimicking the priorities of Anglo-Western forms of internationalization, or are distinctive forms of the concept emerging which better reflect local needs and priorities? This question we also want to address in this concluding chapter, resulting in recommendations on how institutions can bridge the local and vocational focus of their activities with the need for a broader global and international strategy, as well as regional approach, through their curriculum, learning outcomes, applied research, professional development, service to society, and partnerships.

Technical and Technological Institutions (TTIs)

Technical and Technological Institutions (TTIs) are institutions that are a key part of the macro regional system. As described in chapter three, we refer in this study to TTIs as institutions that offer post-secondary training programs, or programs taken after obtaining a “baccalaureate” diploma following 11 or 12 years in regular schools (these regular schools are known in some places as high school, in others as secondary school). However, the training programs offered by TTIs are programs that are completed in less time than traditional university degrees. In summary, TTIs are institutions offering academic programs in less time than those that lead to a bachelor’s degree or equivalent. In terms of UNESCO, we refer to institutions that offer only Level 5 programs as defined by the International Standard Classification of Education (ISCED 2011). One of the expected characteristics of TTIs is its level of relationship with the productive sectors (industry), and at the same time its ability to articulate with previous and subsequent educational levels.

The development of these institutions in the Caribbean is quite varied. Three extra-regional countries, the United States, France and Canada, have served as models or advisors in the processes of forming national institutions or sub-systems. Caribbean TTIs also reflect changes in other countries, often depending on domestic demand and its particularities, as became clear from the country and institution cases in this study.

What are the key lessons to be learned from this study? We have to keep in mind certain limitations. In our study we unfortunately were not able to include input from all countries. We include case studies from five settings (Haiti, Cuba, Colombia, Costa Rica and the Dominican Republic), and feedback from a survey of nine institutions in seven countries (not including the case study contributor Cuba, but adding Puerto Rico, Saint Lucia and St. Kitts). Thus the study tells more about the Spanish speaking countries in the region, a little about the two English speaking islands, and about French speaking Haiti, providing still quite a diverse picture in their respective development and approach. The local context, its stage of development, its economic and political instability, and the position of TTIs in the educational system are characteristics that influence their status, performance and also their internationalization efforts. We summarize first the key findings from each of the five case studies, then add input from the survey of the seven countries, and conclude with general observations and recommendations.

Haiti

While the other countries have developed in the direction of more autonomy over past decades in economic, social, and educational terms, the case study of Haiti and its two TTIs, as mentioned at the end of the Haiti chapter, can best be described as the transition from international development cooperation as basis for their creation and initial development in the local and national context towards a more proactive regional and global player. Haiti Tech is further in the development of its internationalization strategy than “CFPH Canado Technique,” but still has a long way to go from intention to realization of intended outcomes. The combination of support from

French speaking countries as well as other Western donors in the development of its TTIs is still essential, and hinders the creation of a more autonomous international strategy.

This transition is also happening in the rest of the Caribbean region, but in the other countries analyzed in this study, the process towards a more autonomous international strategy is already further underway, while donor dependence, although still present, is less hindering in that process.

Cuba

Like Haiti, Cuba is a specific case, as the development of TTIs or short-cycle programs has started only recently, as becomes clear from the chapter on this country. The characteristics and advantages of including a new level and diversifying Cuban higher education have been studied since 1997. As one of the results of this study, the convenience of creating in Cuba the new level in tertiary education was raised to the direction of the ministry. The study on the possibility of creating that level of higher education was restarted in 2014, and in 2015, the horizon of the changes required by Cuban higher education was broadened when the then Minister of Higher Education created a commission to propose the transformations that should be carried out in the training of professionals in higher education. These were outlined in the document *Policy for the improvement of the system of continuous training of Cuban professionals* as a strategic guide for the changes that have been subsequently implemented. That same document includes the basic ideas for and early contemplation of the creation of what later came to be called short-cycle higher education. In February 2018, the policy for the creation of the short-cycle programs (ESCC in Cuba) was approved by the top authorities of the country. The advice of the Association of Directors of University Institutes of Technology (ADIUT) of France has been a decisive factor in the development of this type of program in Cuba. The first programs started in 2018-2019.

Internationalization has been part of the overall plan for the creation of the short-cycle higher education training programs. These programs have been developed under the auspices of international col-

laboration, specifically of the ADIUT. This has also contributed to designing ESCC's international dimension through a group of strategies, among which are: academic exchange with international partners with emphasis on student and teacher mobility; recruitment of foreign students, mainly from Latin America, the Caribbean and Africa to pursue these programs; promotion of short-cycle programs as offers for the export of academic services; use of international literature as bibliographic material, as well as case studies of international contexts; study of foreign languages facilitating the obtaining of language certificates; and offering online or hybrid programs with intensive use of information technologies and communications.

What Cuba learns is that similarly to Haiti, it is still dependent on external advice and support in its development of TTIs, but it also learns that international cooperation from inception is an essential factor in developing and enhancing these institutions.

Dominican Republic

In the Dominican Republic, there is attention at the national level to the internationalization of higher education, including TTIs, although more in words than in concrete actions, apart from generous international scholarships for talented students. Internationalization stands out as a mechanism for improving the quality and positioning of Dominican higher education, giving to the regulatory entity (SEECYT in 2012, and then MESCYT) a role as an actor in the process. However, the document that does address the issue of student and academic mobility does not mention at any time the concepts of "global citizenship," "internationalization at home" or "internationalization of the curriculum," as mentioned in the chapter on this country.

At ITLA, internationalization is understood as a multidimensional issue that should be part of its overall agenda. It is conceived of as important for the promotion of academic quality and for the projection of the institution internationally. ITLA wants to diversify its teaching and administrative staff and promote knowledge mobility and technology transfer. Within this framework, the internationalization of the curriculum is key so that everyone benefits

from the process, and thus provides greater access to job and training opportunities for students and graduates. ITLA has an International Relations department with the objective of promoting strategies and actions for the internationalization of the institution that facilitate the training of highly competitive professionals prepared to respond to the challenges of our societies.

As an institution committed to internationalization, ITLA faces limitations such as financial constraints, lack of flexibility in the government administrative processes, and the unavailability of international funds. The language barrier is another challenge, as well as the necessary integration of teachers. Although these are internal issues, they are challenges that prevent ITLA from advancing at the expected speed. In terms of student participation, ITLA needs to implement new alliances to promote academic mobility, make the most of technological tools to facilitate academic mobility, and bring in teachers who are experts in technological areas for knowledge transfer. Both for the benefit of domestic students who cannot participate in mobility programs, as well as foreign students, ITLA has to strengthen curriculum internationalization and related processes and procedures.

ASCA, also in the Dominican Republic, is an example of a specialized institute focused on aeronautic programs, and plays a key regional role in professional development. It is active in relations with similar programs on joint education, training and research. Because of its nature, ASCA's concern for meeting international standards and its international engagement are almost mandatory issues. It is a good example of regional positioning for Dominican higher education with 11.78% of international participants in continuing education courses.

Costa Rica

The norms of the Costa Rican higher education system make a distinction between university education and the "para-university" education (level 5). Currently, there are five state universities, 54 private universities, two state para-university institutions and 24 active private para-university institutions in the country. Universities offer all levels of higher

education (5, 6, 7 and 8), with the characteristic of offering two different diplomas at level 6: the university baccalaureate and “licenciatura” degree. In contrast, para-university institutions can only offer programs that correspond to level 5. Para-university students represent 11.58% of overall student enrollment. In the country’s education scheme, technical education is promoted in order to prepare the necessary human resources for labor demand. It is taught in three modalities, with para-university training being the most advanced modality.

The National Technical University (UTN) is the youngest of the public universities of Costa Rica. It was created in 2008, with the purpose of “paying attention to the technical training needs that the country requires, in all higher education levels.” UTN offers the formal modality of technical higher education (para-university) and it was created for that purpose, with the aim of articulating the model of technical education in the country. UTN was born as a new educational option, to contribute, among other purposes, to overcoming two large gaps. On the one hand, the endemic separation between traditional technical education and university education, and on the other hand, the traditional rupture between the university/academy and the productive sectors (industry). UTN’s current enrollment is approximately 14,000 students, most of whom attend para-university programs.

Costa Rica does not have a clear national policy for internationalization, making it the role of the institutions to develop their own policies. From the outset, the internationalization of UTN has been based on the axis of continuous quality improvement in its different components. Within the context of technical education, it is perceived as extremely important to have an internationalized institution, since that orientation will serve to better fulfill a fundamental goal, which is to eliminate the gap between private companies and higher education to train better professionals. Another important reason for UTN to undertake internationalization is to cooperate with other institutions of higher education. Internationalization enables universities to open doors to joint work, strengthening joint capacities, without prejudice and with cooperation in the

development of joint knowledge that benefits the nation and its higher education system.

Since its creation in 2008, UTN authorities visualized the need to create an office responsible for channeling international opportunities and for the international development of the university in its different perspectives. That is why, since 2010, the External Cooperation Directorate has operated; it is responsible for guiding the internationalization process of the university. The internationalization of UTN has been developed from its different axes since its creation. However, it is possible to note that a strategy that guides and maximizes institutional development has not existed to date. The main challenges in developing such a strategy are a lack of clear understanding around the meaning and direction of UTN’s internationalization, and the institution’s recent creation.

Colombia

TTIs comprise close to 30% of higher education in Colombia. The internationalization of higher education has become a fundamental factor in transforming the services offered by HEIs in the country. Internationalization is seen as the key strategy to achieve an adequate articulation between public policy and the developments of globalization and knowledge processes, focusing on supporting higher education institutions in their internationalization processes. This includes the incorporation by the National Accreditation Council (CNA) of internationalization as a factor for high quality in the accreditation processes of academic programs and institutions. This also impacts the role of the TTIs in national policies for internationalization.

The Bogotá Corporation of Technology (CTB) is an institution of private higher education, not for profit and of an academic nature, and registered as a “technological institution.” Since 1996, it has maintained inter-institutional cooperation with the University of Applied and Environmental Sciences (UDCA), through which students can continue university studies in industrial chemistry and pharmacy management, including academic training, research and consulting.

The internationalization of education plays a

preponderant role in the development of CTB's mission as an institution of higher education, becoming a transverse axis to the whole work of the institution, as expressed in its Policy of Interculturality and Internationalization. That policy promotes the intentional internationalization of higher education as a strategic, broad, permanent and dynamic process, with an intercultural and multicultural structure permeating its actions, ensuring its national and international positioning, generating greater quality, relevance, cooperation, solidarity, integration and development within its ethos. It does so through agreements with partner institutions, internationalization at home activities such as an intercultural week, international guests, and academic mobility of its own students and staff. Among the main challenges perceived are overcoming the bilingual barrier, as well as the incorporation of bilingualism in curricular content, and looking for improved training processes in internationalization, with an emphasis on management issues and internationalization of the curriculum.

What Do the Results of Our Survey Tell Us?

In addition to the five case studies, we issued a survey to which nine institutions in seven countries responded. What are the main points that emerge from their responses with respect to the state of internationalization at TTIs in the region?

In the first place, the number of international students in the nine institutions is (with the exception of UTN in Costa Rica, Clarence Fitzroy Bryant College in St. Kitts, and the Inter American University of Puerto Rico) less than 1% of total enrollment. In those three cases it is between 3 and 5%, and only in the case of Clarence Fitzroy Bryant College do most of these international students come from the Caribbean region. However, ASCA has a significant percentage of international continuing education participants. In other words, there is extremely limited international student presence in the TTIs of the Caribbean, but more importantly, the inner-regional mobility of students is almost totally absent. However, the University of West Indies (UWI) does

maintain articulation agreement with several TTIs from the English speaking Caribbean.

The larger TTIs in Colombia, Costa Rica, the Dominican Republic, and Puerto Rico and to some extent the two institutions in Saint Lucia and St. Kitts have some exchange of students, but these are very limited with respect to articulation with other universities and do not take place in a structural way. Clarence Fitzroy Bryant College has some articulation programs with Canada and the USA.

As for partnerships, the main ones are with North America, followed by Europe and the Caribbean region and Latin America, but again they are limited. In the case of North America and Europe these are primarily donor driven and dependent, and within the region exist mainly on paper. The two institutions in Saint Lucia and St. Kitts face an active recruitment of their students for follow-up studies in the USA.

As for policies and strategies, all institutions recognize the importance of internationalization of their institution; none have explicit policies and strategies, but most have some kind of entity that coordinates activities and undertakes actions. Overall, the picture is that of a centralized but marginal approach to internationalization, based on good intentions but lacking a coherent and comprehensive approach, and without available funds.

Costa Rica, Colombia, and the Dominican Republic host institutions that are very active in extra regional higher education organizations and networks. The other institutions do not show similar extra regional activity.

What are the main actions undertaken? These include: signing memoranda of understanding, looking for external donor funding from Europe and North America, participation in international and regional networks, and some exchange of students and faculty. In sum, we observe a rather traditional approach of internationalization, depending more on external donor funding than on well-defined institutional policy and approach, based on own mission, context and needs.

The main challenges perceived are funding, facilities, commitment to and/or understanding of importance of internationalization by teaching staff

and in some cases senior management. Opportunities perceived are: quality improvement, employability, improving the competitiveness of the private sector, personal development of the students, and staying up to date with international developments.

Nearly all institutions make reference to the importance of internationalization of the curriculum, community engagement, and partnerships. There is also in several cases attention to internationalization of research. Efforts in this area beyond intention and relevance are not observed.

The overall concluding picture of the case studies and survey is that of good intentions, limited and fragmented initiatives, lack of funds and facilities, lack of clear plans and strategies, and lack of a clear vision on the relevance and needs of TTIs for internationalization. What is also very clear is the lack of a regional approach and focus for the Caribbean, and a dependence on former colonial powers and donors from North America and Europe.

Recommendations

The picture provided is not optimistic and results indicate the need to address more strategically how TTIs can and should develop their own internationalization plans and policies. Based on this study we recommend the following:

1. Be more explicit about the relevance of internationalization as TTIs, rather than following the general pattern of internationalization of higher education by universities
2. Understand and define more clearly the specific international, intercultural, and global learning outcomes of graduates from TTIs, taking into account also the national and regional context, as a basis for the internationalization policy
3. Pay more attention to the needs of the labor market as a basis for the internationalization strategy, for instance the development of regional and international internship and service-learning opportunities for students, and opportunities for exchange with companies in addition to exchanges with institutions of higher education

4. Pay more attention to the internationalization of the curriculum
5. Take advantage of technology, such as collaborative online learning between the TTIs of the region and internationally-based peer institutions
6. Focus more on regional TTI collaboration in applied research, in joint curriculum development, online collaborative regional learning, overcoming obstacles to mobility and in partnership with the private sector. Look at similarities and complementarities within the region
7. Explore options for a Caribbean network of TTIs to realize a regional policy and network of collaboration. Working together in developing a regional and international strategy is more effective than each trying to reinvent the wheel
8. Independently invest in internationalization and regionalization, instead of making policies dependent on unsustainable donor funding
9. Participate in regional and extra-regional networks to promote TTIs' importance for the Caribbean. The regional and international collective presentation of what short-cycle academic programs could represent to the regional and global community would benefit local TTIs.

In summary, comprehensive internationalization at TTIs is still in a very initial stage; there are serious challenges for TTIs, to be sure, but there are also many opportunities to internationalize TTIs in the Caribbean region, and the region is in a good position to develop such opportunities. The survey has indicated several ideas for such cooperation; now it is time for making them happen. We hope and perceive that our recommendations are a good basis for collaboration and progress, and can also be an example for TTIs in other regions, in particular Africa and South America.

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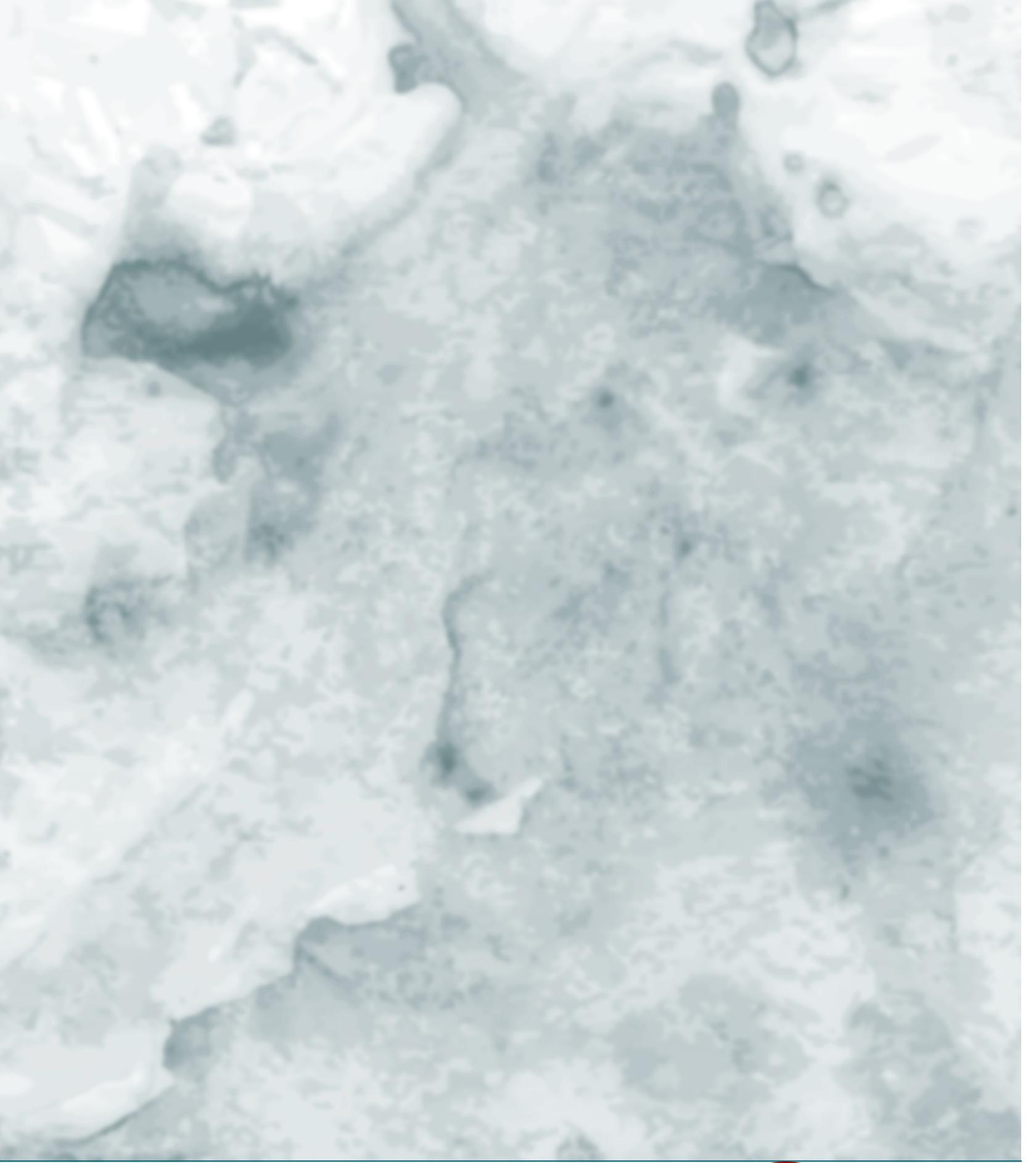
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