

Chapter 21

International Education Hubs



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The forces and opportunities of globalization have dramatically impacted higher education, especially cross-border education. The term *cross-border education* is often used interchangeably with the terms *transnational education*, *borderless education*, and *international academic mobility*. Cross-border education is the preferred term for this chapter and refers to the mobility of people, programs, providers, projects, and policies between and among countries. Studies of higher education shows that international academic mobility is fundamental to the mission of universities (Altbach, 2013). Scholars and knowledge have been moving around the world for centuries. The fact that the notion of universe is the root concept for *university* is strong evidence of the internationality of higher education.

There is no question that the landscape of cross-border higher education has changed significantly in the past three decades. It is no longer just students and scholars who are moving to other countries for education opportunities. Academic programs, education institutions, and new providers are moving across borders to deliver education and training programs in foreign countries. New actors, new international partnerships, new binational universities, and new modes of program delivery characterize the dynamic and expanding area of cross-border higher education.

International education hubs are the latest development. Labeled the third generation of cross-border education, they build on the first generation of student mobility and the second generation of program and provider mobility. Education hubs can be at the country, zone, or city level and involve a critical mass of and collaboration between international-local universities, students, research institutes, and private

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industry. This chapter will focus on the country level hubs, of which there are six in the world—Botswana, Hong Kong, Malaysia, Singapore, Qatar, and United Arab Emirates (Knight, 2014b).

Important to recognize is that an education hub reflects a country's plan and priority to serve and be recognized as a center of education expertise, excellence, and economic activity in the region and beyond. Education hub countries have different objectives and characteristics, but in general the term education hub is used by countries seeking to position themselves as centers for student recruitment, education and training, research, and innovation. A variety of factors are driving these efforts and include modernizing the domestic tertiary education system, generating income, creating a skilled work force, remaining or becoming economically competitive, developing a regional profile, promoting knowledge diplomacy, and transitioning to a knowledge- and service-based economy (Knight, 2011).

The purpose of this chapter is to examine the phenomenon of education hubs within the context of three generations of cross-border education¹. Framing education hubs as the third generation makes it possible to analyze the evolution of education hubs in respect to both the growing numbers of students moving to another country for their academic studies and the more recent boom in the number and types of programs and in provider mobility, including twinning programs, international joint-, double-, or multiple-degree programs, branch campuses, internationally cofounded institutions, and franchise universities (Knight, 2015a).

This chapter has four objectives. The first is to position and analyze education hubs within the frame of three generations of cross-border higher education. The second objective is to conceptually analyze the phenomenon by proposing a definition and a typology of the three major types of education hubs—student, talent, and knowledge–innovation. The third is to identify highlights of six current education hub countries in Southeast Asia, Africa, and the Gulf states by using the proposed typology to categorize them. Finally, the fourth is to examine how education hubs relate to the two previous generations of cross-border education activities in terms of geographic outreach and impact.

Three Generations of Cross-border Education

Numerous studies of higher education show that international academic mobility has been happening for a very long time and has evolved in diverse ways. To provide a brief overview of the evolution of cross-border education Table 21.1 summarizes the highlights of each of the three generations. Worth noting is that these generations are not mutually exclusive. In fact, education hubs build on and extend first and second generation activities.

¹Sections of this chapter have been taken from Knight (2011, 2014a).

Table 21.1 Three generations of cross-border education

Primary Focus	Description
First Generation	
<i>People Mobility</i>	<i>Students</i> move to engage in full degree or short-term study, research, field work, internships, exchange programs.
Students, faculty, and scholars move to a foreign country for education and research purposes.	<i>Faculty</i> moves to teach, engage in professional development, and pursue research. <i>Scholars</i> move to strengthen international research collaboration and networks.
Second Generation	
<i>Program and Provider Mobility</i>	<i>Programs</i>
Programs, institutions, or companies move across jurisdictional borders to deliver education and training.	Types include twinning and franchise, joint-, double-, or multiple-degree, online, or distance programs. <i>Providers</i> Types include branch campuses, franchise universities, codeveloped universities, independent institutions.
Third Generation	
<i>Education Hubs</i>	<i>Student Hub</i> : Students, programs, and providers move to a foreign country for education purposes.
Countries, cities, or special zones attract foreign students, researchers, employees, programs, providers, and research and development (R&D) companies for purposes of education, training, knowledge production, and innovation.	<i>Talent Hub</i> : Students and workers move to a foreign country for education and training and stay for employment purposes <i>Knowledge and Innovation Hub</i> : Education researchers, scholars, higher education institutions, and research and development centers move to a foreign country to produce knowledge and innovation.

Note. Adapted from Knight (2014c, pp. 43–58). Reprinted with permission of Symposium Books.

In the following section, each generation is examined in more detail to illustrate the differences and similarities among them and to raise related issues and challenges.

The First Generation: Student Mobility

Nobody could have predicted the meteoric rise in all forms of student mobility in the last 50 years. The increase in mobile students from about 238,000 in the 1960s (Chen & Barnett, 2000) to 4 million in 2012 (UNESCO, 2014) is staggering. If forecasts are correct, this number will almost double in another 10 to 15 years. In the past four decades, the numbers of students, the types of mobility experiences, the driving rationales, and the destination countries have changed substantially.

When the term student mobility is used in a comprehensive sense, it usually refers to students who are taking a full degree in a foreign country or students who are participating in a semester or year abroad program as part of their academic studies at their home university. More recently, it also involves students enrolled in collaborative degree programs, such as joint, double, or multiple degree programs or franchise and twinning arrangements. Student mobility involves more than enrolling in academic courses abroad; it can include research or field work, internships or practicums. Given the importance of understanding foreign cultures and languages, students, especially those who cannot afford the time or costs of semester abroad, are participating in short-term cultural workshops, tours, and activities.

New forms of virtual mobility are emerging. Virtual mobility involves the use of information communication technologies to encourage cross-border collaboration for teaching and learning and eliminates the necessity of international travel. Working together virtually with counterpart teachers and students helps to enrich the learning experience and enhance intercultural understanding and the exchange of knowledge. Virtual mobility should not be confused with online or distance education, for it involves direct collaboration and exchange in a virtual learning environment and not merely access to learning opportunities or programs through electronic means. Virtual classrooms are yet another form of extending the internationality and geographic reach of universities and merit further attention and research.

Table 21.2 identifies the top 20 destination countries for students wishing to take their degree in a country different than their residence. According to the 2012 data from the UNESCO Institute for Statistics, five destination countries hosted nearly one-half of the total mobile student population: the United States (hosting 18%), United Kingdom (11%), France (7%), Australia (6%), and Germany (5%) (UNESCO, 2014). But the top five also saw their share of international enrollment decline from 55% in 2000 to 47% in 2012. There are new serious players in the field of international student recruitment, especially those from Asia.

In East Asia and Pacific region the traditional destinations of Australia and Japan are rivaled by newcomers China, Malaysia, the Republic of Korea, Singapore, and New Zealand, which collectively hosted 6% of the global share of mobile students in 2012. Among the Arab States, Egypt, Saudi Arabia, and United Arab Emirates are making efforts to recruit students from abroad. These three countries hosted 4% of the global share of mobile students (UNESCO, 2014). Although these numbers may be small, it is anticipated that they will increase substantially in the coming years.

Just as no one anticipated the growth in student mobility, no one predicted that international student recruitment campaigns would be linked to national innovation, science, and technology strategies or to trade and immigration policies, all in the quest for human talent to serve the knowledge economy. The brain train, or circulation concept, is the current term used to describe the trek of students and young professionals from country to country for study and employment reasons. But the notion of circulation masks the reality that there is net brain drain for some countries, usually smaller developing countries, and net brain gain for more economically advanced countries (Knight, 2008). By 2025, it is estimated that 7.8 million students will be enrolled in foreign countries for their tertiary education

Table 21.2 Top destination countries for international students in 2012

Rank	Destination Country	Percentage of Total International Students	Number of International Students
1	United States	18	740,482
2	United Kingdom	11	427,686
3	France	7	271,399
4	Australia	6	249,588
5	Germany	5	206,986
6	Russian Federation	4	173,627
7	Japan	4	150,617
8	Canada	3	120,960
9	China	2	88,979
10	Italy	2	77,732
11	South Africa	1	70,428
12	Malaysia	>1	63,625
13	South Korea	>1	59,472
14	Austria	>1	58,056
15	Netherlands	>1	57,509
16	Spain	>1	55,759
17	United Arab Emirates	>1	54,162
18	Singapore	>1	52,959
19	Egypt	>1	49,011
20	Saudi Arabia	>1	46,566

Note. Adapted from UNESCO (2014). Copyright 2014 by the UNESCO Institute for Statistics. Reprinted with permission. These statistics refer to students who crossed a national border to study or were enrolled in a distance-learning program abroad. These students were not residents or citizens of the country where they studied. Part-time, full-time, undergraduate, and postgraduate students are included. Exchange students are not included.

(Boehm, Davis, Meares, & Pearce, 2002), indicating that the first-generation cross-border education activities will continue to expand in scope and scale. The rationales and impact of student mobility will change as countries look to attract and retain students to fulfill their need for knowledge workers and skilled labor.

The Second Generation: Program and Provider Mobility

In the early 1990s the movement of programs and providers across borders began to increase substantially, raising the number of students able to access foreign higher education programs and qualifications without leaving home. Examples of cross-border program mobility include twinning and franchise programs as well as ones offering joint, double, and multiple degrees, with branch campuses, internationally cofounded institutions, franchise universities, and virtual universities being examples of cross-border institution and provider mobility (Knight, 2015b). Both program and provider mobility have become more popular, creating opportunities for large numbers of students wanting a foreign academic program and qualification.

Unfortunately, there is no comprehensive and reliable database on program and provider mobility. Many countries do not collect this data at the national level. More challenging is the reality that countries do not use the same definition or set of criteria to identify the different modes of program and provider mobility. Although the definitional issue has existed for collecting international student statistics, it is even more problematic to capture reliable data on program mobility (McNamara & Knight, 2015).

Provider mobility, in the form of branch campuses, presents a different scenario. Universities have been setting up campuses in foreign countries for decades, albeit in very small numbers and often without accreditation or licensing from the host country. Factors driving this growth include the increased demand for tertiary education arising from larger secondary school cohorts and the knowledge economy's need for a skilled labor force. Many countries found it more attractive to host branch campuses of foreign public and private universities than to invest in the physical and human infrastructure needed for an expanded domestic higher education sector (Verbik & Merkle, 2006). At the same time, regional and world trade agreements now include education as a tradable service, leading private and public education providers to explore new commercial opportunities in cross-border education. Clearly, large numbers of students have found it more attractive and economical to study at home at international branch campuses or internationally cofounded universities than to go abroad.

An international branch campus is defined as a “satellite operation of a recognized higher education institution or provider which offers academic programs and credentials in a different country than the home institution” (Knight, 2008, p. 181). According to the Observatory on Borderless Higher Education (Lawton & Katsomitros, 2012) there were just 24 branch campuses in 2002. But 13 years later there were 249 operating in all regions of the world. It is revealing to see the distribution and growth of these new initiatives by region. Table 21.3 shows that as of 2015, Asia was home to 83 of the 249 branch campuses around the world. This represented the largest number in a single region, with the forecast indicating continual growth. Of particular interest is that the number of receiving or host countries of branch campuses doubled from 36 in 2006 to 76 in 2015. In that period there were also some branch campus closings: 5 from 2006 to 2009, 12 between 2009 and 2011, and 15 from 2012 to 2015.

Overall, this unanticipated increase in branch campuses highlighted the second generation of cross-border education and strongly influenced the emergence of the third generation.

The Third Generation: Education Hubs

Education hubs are the most recent development and constitute the third wave of cross-border education initiatives. Education hubs build on and can include first and second generation cross-border activities, but they represent a wider and more

Table 21.3 Increase in the number of branch campuses, 2002–2015

	2002	2006	2009	2011	2015
Total number of branch campuses	24	82	162	200	249
Number of source countries		17	22	24	33
Number of host countries		36	51	67	76
Number of branch campuses hosted by region					
Africa			5	18	19
Asia Pacific			44	69	83
Europe			32	48	74
Latin America			18	10	9
Middle East			55	55	51
North America			8	10	12
Branch closures		6	5	12	15

Note. Data from Garrett, Kinser, Lane, & Merola (2016, pp. 51–52) and Lawton & Katsomitros (2012). Copyright by Observatory on Borderless Education and C-BERT.

strategic configuration of actors and activities. An education hub is a concerted and planned effort by a country, zone, or city to assemble a critical mass of local and international actors to support its efforts to build the higher education sector, expand the talent pool, or contribute to the knowledge economy.

There are only a handful of countries around the world seriously attempting to develop themselves as education hubs. These include Hong Kong, Singapore, Malaysia, United Arab Emirates, Qatar, and Botswana (Knight, 2014b). Others still in initial or perhaps “stalled” stages are Bahrain, Mauritius, Korea, and Sri Lanka. The economic crisis of 2008–2010 impacted plans by Botswana and Hong Kong to invest in hub development and slowed their progress considerably. And there are other countries that seem to be using the term education hub only as a branding label to attract more international students and providers.

In addition, there are cities around the world, for instance Panama City, Bangalore in India, and Monterey in Mexico, that have been seeking to brand themselves as education or knowledge cities. Some city-level initiatives, Panama being a prime example, are trying to be international in scale, while others are local level initiatives. The diversity of approaches to and motives for developing an education hub raises the questions of what, exactly, an education hub is and what it involves.

There is no single model of an international education hub or any one-size-fits-all approach to establishing one. Each country or jurisdiction has its own set of drivers, strategies, and expected outcomes. A new feature of the third generation of cross-border education is the emphasis on knowledge production and innovation. Education and training initiatives have been traditionally associated with the first two generations of cross-border education, so the addition of knowledge generation and application is a noteworthy development and feature of education hubs.

The Definition and Types of International Education Hubs

With countries, scholars, and policy makers defining education hubs differently, it is important to have a common understanding of the term. The purpose of this section is to examine the proposed working definition and typology of three different types of education hubs.

Key Concepts of an Education Hub²

Given the diversity of education hub models, plus the lack of any systematic study of the phenomenon to date, an analysis of the common characteristics of education hubs is warranted. On the assumption that the number and types of education hubs will increase, any working definition needs to be generic enough to apply to all levels of education hubs as well as to their scope of engagement and impact. A proposed definition, regardless of the level of the hub (country, zone, or city) or the region of the world where it is located, is, “an education hub is a planned effort to build a critical mass of local and international actors strategically engaged in cross-border education, training, knowledge production and innovation initiatives” (Knight, 2011, p. 227). The identification of driving rationales, expected outcomes, sponsors, major actors, and specific types of activities is intentionally omitted to allow the definition to apply to the emerging diversity of hubs. To fully understand the meaning and dimensions of the proposed definition, it is helpful to examine each core concept.

The concept of a *planned effort* indicates that a hub is an intentional or deliberate project that normally involves a strategy, policy framework, and some public and private investment. In other words, a hub is more than a coincidental interaction or colocation of actors working in the education and knowledge sectors. The notion of being planned helps to decrease the chances that it is merely a fad, a branding exercise, or a serendipitous set of temporary interactions among key players.

The notion of *critical mass* suggests that there is more than one actor and set of activities involved. This means that a single branch campus, franchise program, science and technology park, or internationally engaged institution does not constitute a hub. A hub is different from individual first and second generation cross-border activities because it brings these kinds of initiatives together in some kind of planned or coordinated project. The concept of critical mass intentionally goes beyond a random collection of cross-border activities by denoting the presence of a key combination of actors. The term *colocation* was considered and deliberately excluded from the definition even though it is significant to the meaning of a hub. Colocation can mean different things at the city, zone, or national levels. Actors can be colocated in a single location or multiple ones because of complementarities of

²The definition discussion is based on Knight (2011).

services, but this does not imply that all actors must be colocated in one designated area. Larger countries such as Malaysia and United Arab Emirates are good examples of multiple activities and multiple colocation sites, while Hong Kong and Singapore are small enough that the notion of one colocation site can apply.

The mention of *local and international actors* indicates that an international education hub involves both domestic and foreign players. These can include local, regional, and international students, scholars, institutions, companies, organizations, research centers, and knowledge industries. The term *actor* is used in an inclusive manner to cover providers, producers, and users of the education, training, and knowledge services and products. The diversity of actors will vary from hub to hub, depending on the rationales and functions of the hub, so different types of actors are intentionally not specified in the definition.

The idea of *engaging strategically* is central to the definition because it emphasizes a deliberate sense of interaction or relationship among the actors. While the nature of the engagement will differ from hub to hub, a fundamental principle is that there is added value when the actors connect, collaborate, or share common facilities and resources. This does not deny that there will be competition among actors offering similar services or products, but the pros of being part of a strategic and interactive initiative appear to outweigh the cons. The nature and number of interactions is unlimited, given the diversity of local and international actors and users. In addition, an education hub normally involves a master plan or overall strategy that is augmented by aligned policies and regulations, a match-up that enhances the chances of success and sustainability, as well as substantiating the importance of a strategic approach laid out in the definition.

Cross-border education, training, and knowledge and innovation initiatives depict the broad categories of activities and outputs of hubs. There is a wide selection of initiatives and services available, depending on the type of hub, priorities of the individual actors, and strategic plan of the sponsor.

Worth noting is that the definition does not refer to the level (zone, city, or country) of the hub because that quality is determined by the hub sponsors, as are the reach or engagement of its actors and the spread of its impact and influence. For example, a zone-, city-, or country-level education hub can aim to attract actors from its immediate vicinity or beyond, with its impact being local, national, regional, or global. The level and scope of a hub's activities are, therefore, not specified in the generic definition, although these elements would normally be part of the description of a specific education hub.

Finally, an education hub has not been defined in physical or spatial terms, for instance, as a designated area, because this could be too limiting. Rather, the central concept involves connectedness or a network of interactions among engaged local and international actors who undertake cross-border education activities to achieve their individual objectives as well as the collective goals and outcomes of the sponsoring body, whether it is a city, zone, or country.

The Types of Education Hubs: Student, Talent, and Knowledge-Innovation

As indicated, different rationales, actors, and activities characterize education hubs. Some countries see hubs as a means to build a critical mass of foreign students and providers to generate income as well as modernize and internationalize their domestic higher education. Other sponsors want to become hubs in order to train foreign and local students and employees to become part of a skilled labor force. And other countries focus on attracting foreign students and labor, institutions, and companies to build a vibrant research, knowledge, and innovation sector to lead them into the knowledge economy.

In order to capture the differences among various hub approaches and allow for a more nuanced understanding and exploration of education hubs, a typology of three categories of hubs is suggested (Knight, 2011). The typology is based on the rationales driving hub development, not on the location or level of hubs.

The *Student Hub* is the most focused type of education hub. Its key activity is educating and training local, expatriate, and international students. In addition to recruiting students, this model also seeks to increase access for all types of students by attracting foreign higher education institutions offering franchised and twinning programs or establishing branch campuses. The primary objectives of student hubs are a) to provide increased access to higher education for local students, b) to generate revenue from international student fees, c) to expand the capacity of local higher education institutions (HEIs), d) to internationalize the domestic higher education system, and e) to enhance the profile, branding, and ranking of local HEIs and the host country.

In the student hub scenario, both local HEIs and foreign providers recruit local and international students to their programs and campuses. A student hub often gives priority to foreign student enrollment even though there is an interest in providing wider access for local students. A student hub may intend to attract students from all parts of the world, but in many cases the majority of students come from neighboring countries. In a student hub model, foreign students are recruited to complete their studies in the host country and then return home or move to a third country. Generally, they are not encouraged or provided incentives to stay in the host country.

The *Talent Hub (Skilled Workforce)* model focuses on student education and training but differs from the student hub because its overarching goal is human resource development for a skilled work force. Foreign students are therefore encouraged to remain in the host country for employment purposes. Retention of foreign students (and workers) is central to the talent hub model. International HEIs, as well as private training and education companies, are encouraged to offer academic programs and professional development opportunities aimed at international, expatriate, and national students, as well as local employees. The overall goal is human resource development. The driving objectives are to a) expand talent pool of skilled workers, b) build a service or knowledge based economy, c) increase economic competitiveness and influence in region and beyond, and d) strengthen

the quality and relevance of labor. Education and training institutions and providers are often colocated in a common zone to facilitate the use of shared facilities and promote collaboration among them and with industry. In order to develop a critical mass there can be more than one colocation site in a country.

The *Knowledge–Innovation Hub* broadens its mandate beyond education and training to include the production and distribution of knowledge and innovation. Foreign actors, including universities, research institutes, companies with major research and development activities are persuaded through favorable business incentives to establish a base in the country and to collaborate with local partners in developing applied research, knowledge, and innovation. The model’s primary objectives are to a) to build a knowledge- and innovation-based economy, b) to attract foreign direct investment, c) to expand the capacity of local research and development centers, d) to increase competitiveness in specialized fields, and e) to enhance soft power. Collaboration among the key players—foreign and local education institutions, industries, research centers, and companies—is a key factor in establishing a knowledge and innovation hub and providing added value for the major actors.

Highlights of Six International Education Hubs

As of 2015, the six international country-level education hubs of Hong Kong, Singapore, Malaysia, United Arab Emirates, Qatar, and Botswana were in different stages of implementation. They are located in three different regions of the world—the Middle East, South East Asia, and Africa. While the six countries or jurisdictions are very different, all are relatively small and committed to moving their economies from a dependence on national resources or manufacturing to being based on knowledge and service industries.

The term education hub is a subjective and self-ascribed label. There is no exclusive set of indicators or official body that determines whether a country meets stated requirements to be called an education hub. As the popularity and *branding value* of the concept increases, so does the number of countries seeking to become education hubs.

Singapore is one of the more serious and successful hubs. It has moved over the last 15 years from its *Global Schoolhouse* project, which concentrated on recruiting foreign students and prestigious universities, to its current strategy emphasizing investing in major research initiatives and facilities to establish sustainable international research partnerships (Sidhu, Ho, & Yeoh, 2014). Its current focus is on research, knowledge production, and innovation, with the Singapore government’s investment of considerable financial, human, and structural resources in the project underlining its belief that knowledge and innovation are the cornerstones of its shift to the knowledge economy. Based on the previously described typology, Singapore can be categorized a Knowledge–Innovation education hub and is, interestingly, the only one of the six country level education hubs in this category.

Qatar has taken another approach by developing itself as a Student-Talent education hub with aspirations of becoming a Knowledge-Innovation education hub. Its centerpiece is Education City, a site housing 10 prestigious universities from the United States and United Kingdom invited there and generously supported by the Qatar Foundation, which oversees the strategy and development of the country's hub plans. Another core element is a science and technology park that Qatar established in a free zone, which is special jurisdiction offering tax and financial incentives to attract international branch campuses. Forming international research partnerships, building research facilities, developing a research culture, training researchers, and providing major research grant programs are all key components of the Qatar approach (Ibnouf, Dou, & Knight, 2014).

United Arab Emirates, a neighbor of Qatar, can also be labeled a Student-Talent education hub, although it has chosen a very different model. Four of the country's seven emirates have recruited international branch campuses (IBCs) to provide increased access for expatriate and domestic students. The Knowledge Village in Dubai and the Dubai International Academic City are the best known free zones in United Arab Emirates and together host about 25 of its 37 IBCs. Using a different approach, Abu Dhabi, the wealthiest emirate, has invited and generously supported elite universities from the United States and France and has invested in research partnerships with foreign universities to develop centers of excellence, such as Masdar City. Abu Dhabi's approach of investing in and supporting foreign branch campuses differs markedly from the commercial approach used by the other emirates, especially Dubai. There is no overall country-level strategy for developing United Arab Emirates as an education hub. This has led to the diversity of approaches, which seem to have been successfully used to date (Fox & Al Shamisi, 2014).

Malaysia is a country with a long history of international education. It has developed a comprehensive but diversified approach to positioning itself as a Student education hub with long-term aspirations of becoming a Knowledge education hub. Over the last decade, seven international branch campuses have been established throughout the country and there are more in the pipeline for approval. Malaysia has doubled its number of international students, using its attractiveness to Muslim students as a key feature. Iskandar, an ambitious new Malaysian free zone abutting Singapore, is also under development and already home to several branch campuses of major international universities. Other policies and programs have also been established that aim to increase Malaysia's attractiveness and competitiveness as an education hub. The country's efforts to date have focused on education and training rather than research (Aziz & Abdullah, 2014).

Hong Kong's intentions to position itself as an education hub and its related policy statements have been clear, but plans to move forward are less visible (Mok & Bodycott, 2014). Troubled by the economic downturn in 2008, Hong Kong's efforts have focused on offering scholarships and recruiting more "non-local students"—a term used to describe students from the region and Mainland China who officially cannot be classified as foreign or international students (Cheng, Cheung, & Yeun, 2011). Given its priority of recruiting students, Hong Kong sees itself as a Student

education hub, but seeks to become more of a Talent education hub as immigration policies change and more students stay and work in the city. Aspirations are high but progress has been slow, so Hong Kong is probably best described as an education hub in the making.

Botswana has taken a rather innovative approach to planning its development as a Talent education hub. To broaden its economic base, Botswana identified and prioritized five different industrial hub sectors and areas for investment. With all of them requiring competent and trained professionals, the country envisions the education hub as serving to educate, train, and supply the required labor. While Botswana has taken steps to attract more foreign students and international branch campuses, progress has been moderated by financial challenges. The extensive consultation and planning process has provided a firm foundation for achieving its goal of becoming a Talent education hub, but finding resources to implement the plan is taking longer than the government anticipated and Botswana's progress fulfilling its plan has been limited (John, Wilmoth, & Mokopakgosi, 2014).

The Relationship of Education Hubs to First and Second Generation Cross-border Education Activities³

As I have discussed, education hubs have built on first and second generation cross-border education activities. It is useful, therefore, to explore whether there is any correlation between education hub locations and the most popular international student destinations and countries hosting international branch campuses. A geographic lens is used to examine these potential relationships.

Destination Countries for International Students

Table 21.2 lists the top 20 destination countries for international students (UNESCO, 2014). Interestingly, none of the six education hub countries rank among the top 10 destination countries for international students, with Malaysia in 12th place, followed by United Arab Emirates and Singapore in the 17th and 18th positions, respectively. This raises the question as to why education hub countries are not preferred destinations for larger numbers of international students.

Worth noting is that the six hub countries have reasonably well developed higher education systems but are relatively small in size, which makes them unable to host large numbers of international students. Most hubs, especially the student and talent hubs, aim to increase the number of education providers and programs, and hence the number of students. In contrast, the giants of international student recruitment

³This section is based on the discussion in Knight (2014a).

like the United States, the United Kingdom, and Australia are already popular destination countries and not moving toward establishing themselves as education hubs. The international education actors and activities in these countries are so diverse and numerous that trying to develop an education hub master plan would be a daunting challenge.

Economic development plans, international education engagement, and size are all factors at play in determining the desirability and potential of becoming an education hub. It appears that if an education hub is to be anything more than a branding label or status symbol, it will probably continue to be the smaller and more developed countries that are able to strategically invest considerable effort and funding in planning and developing a critical mass of local and international actors working collaboratively on cross-border teaching, training, and research activities. Thus, it will likely not be the large countries now leading international student recruitment that transition into education hubs, but these smaller countries. This may be counterintuitive but the reality of the cited student data supports the conclusion.

Zone- and City-Level Hubs

A possible alternative scenario involves these large countries so successful in international student recruitment establishing education hubs at the city or zone level. These kinds of education hubs are characterized by colocation of key actors in a specific geographic area. Boston is often referred to as an education hub because of its concentration of universities and research institutes. Interestingly, Boston did not start out with a master plan to develop itself as an education hub, but it may be the best example of a city-level education hub in the world (Crabtree, 2006). India has announced its plan to establish 12 city-level education hubs, but close examination of those plans reveals an aim to foster closer links between local HEIs and private industry. Thus, the country does not plan, at least at this stage, to make the cities a center of local and foreign actors working collaboratively on cross-border education activities. Monterrey in Mexico is an example of a city that actually did work on a strategic plan to develop and market itself as a knowledge city (Engardio, 2009). Plans, investments, and actors were on board but Monterrey's early progress stalled because of political and economic problems associated with the growing drug cartels in the region.

Panama City is another interesting example of an urban center attempting to become an education hub. Over the last ten or fifteen years, Panama's City of Knowledge has undertaken several bold initiatives (Vonortas, 2002), including the establishment of a "Techno Park" that provides infrastructure and services to research and technology companies, houses many regional offices of international government organizations, manages international cooperation projects, and hosts foreign universities' international programs and one branch campus. Although the city has yet to achieve its goal of being a preferred destination for international

Table 21.4 Top branch campus source and host countries, 2015

Source Countries		Host Countries	
United States	78	United Arab Emirates	31
Australia	15	China	32
United Kingdom	39	Singapore	12
France	28	Qatar	11
Russia	21	Malaysia	12

Note. Data from Garrett et al. (2016, pp. 48–51).

students and foreign branch campuses, it has developed an interesting model catering to the needs of the country and the demands of the market.

Silicon Valley in California is a well-known example of a successful zone-level research and innovation hub. Other countries are trying to emulate this successful initiative, with, for example, Bangalore in India often being referred to as the Silicon Valley of India (Collato, 2010). Korea is another interesting case. Given its strategy of developing two special education zones, the Songdo Global University Campus and Jeju Global Education Campus, it is still unclear whether Korea will become a comprehensive country-level education hub, integrating the two zones and other international education projects, such as Brain Korea 21, or a nation with two independent, zone-level education hubs.

International Branch Campus Host Countries

It is equally interesting to discover if there is any relationship between the location of international branch campuses around the world and the location of education hubs. As of 2011 there were about 200 international branch campuses operational in more than 67 countries around the world (Lawton & Katsomitros, 2012). Unlike the lack of correspondence seen in regard to destination countries for international students, there seems to be a direct correlation between international branch campuses and education hubs. The evidence is clear and convincing, with four of the five top host countries of branch campuses being country-level education hubs. As presented in Table 21.4, the top receiving countries in 2011 were United Arab Emirates, Singapore, China, Qatar, and Malaysia. Counting the six established country-level education hubs and four emerging ones (Korea, Mauritius, Bahrain, Sri Lanka), education hub countries hosted 40% of the total branch campuses in 2015 and were also home to the highest concentration of education hubs in individual countries (except for China).

In conclusion, it appears that the education hub countries are not necessarily the most popular destination for international students, although they do host the largest concentration of international branch campuses. There are many factors that influence a country's decision to position itself as a hub, and size appears to be one them. Smaller countries that are relatively politically and economically stable have the

capacity to make and attract public and private investment, support a reasonably adequate tertiary education system, and undertake the planning and policy preparation necessary to develop themselves as education hubs. It is the countries importing international branch campuses that are hubs, not the large countries exporting them. As of 2015, the majority of hub countries were focused on attracting students and education providers for economic reasons or for developing a skilled work force. Only Singapore can be described as a knowledge and innovation type education hub building on its reputation for excellence in its higher education system and its long history of strategic international engagement with top universities around the world.

Regional Engagement of Education Hubs

The regionalization of higher education is an increasingly important trend, not only in Europe, but also in Asia, Africa, and Latin America (Aphijanyathan, 2010; de Prado Yepes, 2006; Knight, 2013). It is therefore interesting to look at the issue of regionality with respect to the geographical reach and engagement of education hubs. Reach and engagement refer to the extent to which an education hub reaches out to other countries to attract and involve key actors and participants in cross-border education activities. Given that international branch campuses are key players in hubs, the location of their home or source institutions is relevant to the question of regionality. Table 21.5 summarizes the total number of international branch campuses per hub country and indicates how many are linked to universities within the same region and how many are sourced from countries outside the region. Only three countries—United Arab Emirates, Malaysia, and Singapore—have a handful of branch campuses from universities located within the region, representing about 17% of the total. This demonstrates that the reach and engagement of education hubs in terms of branch campuses is primarily beyond the region. For some, this is an unexpected finding, for education hubs are often promoted as being regionally based.

Table 21.5 Regional source of international branch campuses (IBCs) in education hub countries

	Number of IBCs in Country	IBCs External to Region	IBCs Internal to Region
Botswana	1	1	0
Hong Kong	5	5	0
Malaysia	12	5	7
Qatar	11	11	0
Singapore	12	7	4
United Arab Emirates	31	29	2
Totals	72	58	13

Note. Data from Garrett et al. (2016, pp. 48–51).

Unfortunately, reliable data is not available on whether the international students enrolled at branch campuses or local HEIs originate from countries internal or external to the region. A best guess is that overall more students come from countries outside the region, but this is not true for all countries, with Hong Kong and Qatar being two examples where this does not apply. Furthermore, United Arab Emirates is a difficult situation to assess because many of the students at branch campuses there are the children of expatriates and though born and brought up in United Arab Emirates hold the citizenship of their parents' home country. In this case, what is their country of origin—the one where they have lived all of their lives or their country of citizenship? The situation is murky.

Looking to the Future of Education Hubs

It is fascinating and at times bewildering to imagine the evolution of education hubs over the next decade. If the pace of change continues at the rate seen in the last ten years, the education hub phenomenon is bound to experience fundamental transformations. Will one model of education hub dominant? Will the demand for international education remain strong enough to support student-type hubs dependent on physical mobility or will student hubs become virtual entities? Is the term education hub anything more than a branding exercise or marketing strategy? Will talent hubs become a powerful and sustainable strategy for brain gain? Will education hubs evolve into strong and effective agents of knowledge diplomacy? Education hubs are not static entities; they evolve in reactive and proactive ways to external exigencies, unintended consequences, and new opportunities. Are binational or multinational hubs on the horizon? Will education cities become more popular and ubiquitous? Will education hubs morph into a fourth generation or be replaced by a new cross-border education development? These kinds of questions and speculations have no immediate answers, but they do serve to stimulate more lateral thinking about the future of cross-border education and how HEIs work collaboratively and internationally with other domestic and foreign actors.

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