

Online-Learning and Its Utility to Higher Education in the Anglophone Caribbean

SAGE Open
October-December 2014: 1–14
© The Author(s) 2014
DOI: 10.1177/2158244014555118
sagepub.com


Laila N. Boisselle¹

Abstract

The theoretical piece uses the extant literature to define online-learning, weigh its effects on teaching and learning, and examine its utility in higher education within the Anglophone (English speaking) Caribbean territories. Online-learning is defined here as an integrative application of Information Communication Technologies (ICTs). This article looks at the technical components of online-learning as well as how online-learning is impacted by environmental factors such as institutional policy, democratization, quality assurance, and the rise of the mega-university. This article also considers the coalescence between tools, audience, and environment to suggest on the utility of online-learning to a Caribbean learning community.

Keywords

online-learning, distance education, higher education, tertiary education, Caribbean.

Introduction

This article utilizes the contemporary literature to define online-learning and to comment on its effects on teaching and learning within higher education in the English speaking (Anglophone) Caribbean. Online-learning is considered here to be an integrative application of Information Communication Technologies (ICTs), and both the technical components of online-learning as well as some of the environmental factors that impact online-learning have been considered. The technical aspects considered by the piece are the following: what is meant by “online,” what is meant by “learning,” and how these two might intersect to produce “online-learning.” A general situational analysis of regional higher education indicates a major need to smooth out and expand access and enrollment (that is the increased democratization of higher education services); to make ICTs a more prolific and user-friendly mode of educational delivery; and for a Regional Accreditation Agency to maintain high quality standards (Tewarie, n.d.) through quality assurance (QA; Smith, 2011; Thurab-Nkhosi, 2010). Hence, the environmental factors considered by the article are institutional policy, democratization, QA, and the rise of the mega-university. Though the article also considers both the technical and environmental factors of online-learning generically, it focuses on how these coalesce particularly within the contextual backdrop of the English-speaking (Anglophone) Caribbean and indeed suggests that the utility of online-learning should be determined on a case by case basis.

The Caribbean Context

The Anglophone nations of the Caribbean region are the focus of this article as they have all gained independence

between the 1960s and the 1980s and hold sovereignty in determining their national education policy agendas. When the term “Caribbean” is used alone within this article, it is these Caribbean Anglophone territories that are being considered. Some of these independents, such as Barbados, are not yet a republic, and bear ties to “mainland British rule through the leadership of an appointed governing authority” (Ali, 2008, p. 1). The Anglophone nations also make up the bulk of The Caribbean Community (CARICOM) whose policies can affect or direct their national educational policies and practices:

CARICOM’s main purposes are to promote economic integration and cooperation among its members, to ensure that the benefits of integration are equitably shared, and to coordinate foreign policy. Its major activities involve coordinating economic policies and development planning; devising and instituting special projects for the less-developed countries within its jurisdiction; operating as a regional single market for many of its members (Caricom Single Market); and handling regional trade disputes. (“Caribbean Community,” n.d.)

The geographic, cultural, and developmental profile of the Caribbean gives it unique educational considerations. Within the Caribbean (both English- and non-English-speaking countries), approximately 42 million people (United Nations Department of Economic and Social Affairs Population Division, 2011) are scattered across 30 territories.

¹The University of the West Indies, St. Augustine, Trinidad.

Corresponding Author:

Laila N. Boisselle, School of Education, The University of the West Indies, St. Augustine, Trinidad and Tobago W.I.
Email: boissellelaila@gmail.com



These territories are either sovereign nations or overseas dependents or departments, within roughly 700 islands, islets, reefs, and cays strewn over some three million square kilometers (“Caribbean,” n.d.). A Caribbean nation can be made up of numerous islands, islets, reefs, or cays and for this reason a “nation” is often considered to be synonymous with the “territory” that it covers or represents. Arguably, given the way that territories are physically scattered, digital technologies may be the best way to increase the delivery of educational services across the region. However, most of the territories are still considered to be developing or underdeveloped and lack the structural and economic capacity to develop the systems that are necessary to pursue such dissemination. The Bahamas, Barbados, Guyana, Jamaica, Suriname, and Trinidad and Tobago are designated as More Developed Countries, whereas all other members of CARICOM are designated as Less Developed Countries (Caribbean Community Secretariat, 2001, Article 4, p. 6). In addition, Caribbean societies are oral ones in which allegiance to the group—for example, respect and dedication to family, community, and their activities—are highly valued culturally. This may partly explain why we tend to enjoy face-to-face interactions as opposed to virtual ones, and why our societies to some extent have resisted the technological creep that has made ICTs almost indispensable to the everyday lives of the societies of the metropolises.

As it is for the developed world, within the developing Caribbean too, promotion of higher education as a public good is believed critical to the continued advancement of the region’s human resources and economies (Leo-Rhynie & Hamilton, 2007). Some Gross Enrollment Rates (GERs) in higher education within the region are for Barbados (53%), Jamaica (19%), Guyana (12%), Trinidad and Tobago (11%), St. Lucia (10%), Anguilla (5%), and Belize (3%). Regionally, most countries have less than a 10% GER (Tewarie, n.d.). Trinidad and Tobago continues to aim for a 60% GER by 2020 and Barbados for 55% by 2015 (Leo-Rhynie & Hamilton, 2007). Compare these to the GERs of Europe and Central Asia, which around 55.6%, are among the highest worldwide. Internationally, though the average figure has climbed from 19% to 30% between 2000 and 2010, roughly 75% of global youth old enough to enter higher education have not done so (Tewarie, n.d.).

Online-learning’s ability to tailor itself to particular learning needs might have allowed it to contribute to historic expansions in student enrollments in higher education globally. There is still far to go, and in spite of “an unprecedented demand for, and a great diversification in higher education, as well as an increased awareness of its vital importance for sociocultural and economic development” (United Nations Educational, Scientific and Cultural Organization [UNESCO], 1998, p. 1), higher education can still be considered as a scarce resource (Hiltz & Turoff, 2005). Geith and Vignare (2008) indicate that even as developed countries are making large strides toward UNESCO’s Millennium

Development Goals and Education For All (EFA) in primary and secondary education, they are still trying to grow their participation in higher education. Indeed, the huge gaps in accessibility to, and resources for, higher education and research, between developed, developing, and least developed countries, continue to widen (UNESCO, 1998). Possibly, the flexibility of online-learning may be able to help to decrease these disparities.

Online-Learning

Online-learning, as an integrative application of ICTs, together with the networking offered by the worldwide-web, has helped to make teaching and learning “even more ecological and evolutionary” (Kelly, 1994, p. 394; Louisy, 2001). Even as users enjoy the benefits of being connected within an evolving and networked community, ICTs simultaneously allow them the power to satisfy their individualistic needs through what I call the iCulture. The iCulture necessarily caters to the individualism of the “i” as the functionalities of ICTs can be tailored to suit personal needs and preferences. Within education, the iCulture can harness ICTs and the new digital tools to provide learners with a student-centered, user-friendly domain designed to satisfy their individual learning demands. Concerns that online-learning hegemonizes education through one-size-fit-all models that might not suit Caribbean needs may have more to do with how online-learning is applied than to its innate abilities and adaptability. In fact, online-learning also increases opportunities to meet the needs of a variety of students, including returning and working students, benefitting from its time-place flexibility (Cantrell, O’Leary, & Ward, 2008). Moreover, as rapid change revolutionizes jobs, online-learning can be tailored to provide training at the workplace that can deliver skills just as they are required for performance (Clegg, Hudson, & Steel, 2003; Larreamendy-Joerns & Leinhardt, 2006).

Even so, there is concern that online-learning’s touted egalitarian and democratic aims in terms of wide access to varied populations (Bernard & Thompson, 2003; Cantrell et al., 2008; Evans, 1995; Gulati, 2008; Larreamendy-Joerns & Leinhardt, 2006) might have been hijacked to a far less learner-centered cause. Clegg et al. (2003) suggest that online-learning is being propagated by managerialist agendas with the principal aim of creating a labor force skilled to the demands of the new knowledge economy. This might be explained as an efficiency project that threatens to McDonaldize (Ritzer, 1996) education by simply seeking the most cost-effective means to produce large amounts of workers, and which does not primarily seek the developmental interests of the adopting parties involved (e.g. of the Caribbean region). Furthermore, higher education has certainly been internationalized (Louisy, 2001), and as a tradable commodity within liberalized environments has proven a multi-billion dollar business (Larsen, Martin, & Morris,

2002). Indeed, Massive Open Online Courses (MOOCs) and mega-universities may become lucrative investments as government subventions in education continue to decline. It is important that within such a liberal and globalized environment that the incarnation that online-learning assumes within the Caribbean meets the developmental needs of the region. This article looks now at the tools that make online-learning possible and how those have been found to operate within Caribbean spaces.

Online-Learning: The Tools—“Online” and “Learning” Are Not Mutually Exclusive in High-Quality “Online-Learning”

In this section, the article considers the tools associated with online-learning. Larreamendy-Joerns and Leinhardt (2006) suggest that online-learning’s ancestry of computer-aided instruction (CAI) and instructional technology locates it within discussions of how students *learn*. On the other hand, as a descendant of distance education, online-learning may be considered too as a new educational *technology* whose “online” character allows it to facilitate the learning of students who are at some distance away from the instructor. In looking at the tools of online-learning the article hence considers what it means to be “online,” what it means to “learn,” and subsequently how the two interact within “online-learning.” The discussion is approached with the awareness that the ICT tools on which online-learning and its uses are predicated are revolutionized on an almost daily basis and make the directions of online-learning difficult to predict.

The “learning” of “online-learning”: *Online-learning as a subset of general learning.* Online-learning is actually a subset of learning in general (Garrison & Shale, 1990 in Anderson, 2011). It has been suggested that learning can be achieved through environmental designs utilizing four inter-related attributes—learner-centeredness, community-centeredness, knowledge-centeredness, and assessment-centeredness (Bransford, Brown, Cocking, & National Research Council, 2004). Within the Caribbean where there is high competition for sparse resources (which are hence usually allocated via some strict merit system), learning tends to become assessment dominated even if the instruction is set-up by the teacher to be learner-centered, community-centered, and/or knowledge-centered. For instance, for the last two years I have taught a final year undergraduate course in science education for in-service teachers. All of our students are full-time teachers and the course was executed with 50% face-to-face and 50% online components after students requested a high online element to facilitate their busy lifestyles. In both years, while the online activities were used to deliver course content as well as to build the final assignment, they were not scored. In both years, the participation in the online portion of the course was extremely low, so low

that the online materials had to be gradually moved into the face-to-face sessions and the online classes abandoned. Students were primarily concerned with the completion of their final assessment as opposed to covering the course materials adequately, and as the online portion carried no score toward the assessment, they were disinterested in its proceedings.

Learner-, knowledge-, community-, or assessment- centeredness can be secured through a variety of interactions within learning spaces. First, student–student and teacher–teacher interactions allow both students and teachers to benefit from peer review and membership within a professional learning community (Anderson, 2011). However, while instructors have been found to view teacher–learner and learner–learner interactions as primary to high-quality online-learning, student opinion toward increasing these types of interactions varies, apparently according to their personality and learning style (Cantrell et al., 2008). Second, within virtual environments content–content interactions are possible between automated information sources so that information remains fresh and can develop new aptitudes. “For example, a weather tutorial might take its data from current meteorological servers, creating a learning context that is up-to-date and relevant to the learner’s context” (Anderson, 2011, p. 48). Third, by tracking and assessing student–content interactions within an online environment, adaptive learning paths catering to the needs of specific users (Anderson, 2011) become possible. Last, teacher–content interactions allow instructors to keep course and knowledge materials updated and relevant (Anderson, 2011). Understandably, the increased interactivity in online environments is often overwhelming to many new instructors especially because many students expect the immediate feedback afforded by the web (Anderson, 2011; Chen, Lin, & Kinshuk, 2008). In my experience, Caribbean student–teachers require an extra deal of hand-holding to navigate the varied types of interactions that online spaces can offer. I have often had to teach my students how to use the online-tool while attempting to teach them the subject-content that the tool was designed to deliver. I feel that the courses that I teach are not assessing my students’ ability to navigate and interact within an online space but rather their competency in the content area. I try then to ensure that their online skills do not mitigate their overall success in the course; this has often times ended up significantly increasing the personal effort needed for me to successfully deliver such online courses.

The “online” of “online-learning”: *Facilitating learning via remote access.* Learning-that-is-online offers remote access to a 24-hour classroom from any internet source at distance from the instructor (Ally, 2011; Anderson 2011). Models of online instruction range from a depository of notes in an online holder to synchronous, interactive, and collaborative web classes. Ironically, ICTs that facilitate high interactivity diminish time–place independence (Anderson, 2011), are very expensive, and are more time-consuming to establish.

The power of its collaborative networking capability between participants and the level of time–place independence that it allows, decides whether online instruction is indicated as “mixed” (blended) or “online” (Harasim, 2000, p. 46). Instruction that is time–place independent and uses ICT tools (such as social media, blogs and wikis for instance) to set up a powerful collaborative network between participants (including the instructor) can be indicated as an online-learning environment. Early distance education was online but stand-alone and expected candidates to interact independently with heavy volumes of text-based materials. Nowadays, online-learning utilizes ICTs to network participants in different locations to the instructor and to each other in collaborative, synchronous communications. Online-learning is hence now possible through either an independent or a collaborative study mode (Anderson, 2011). Within the developing spaces of the Caribbean in which I have taught the choice between an independent or a collaborative mode has not, in my experience, been primarily based on the needs of learners or the utility of the modality at promoting learning. Instead, economic factors often decide as the licenses for the synchronous software needed to provide a collaborative online-learning environment are usually very expensive, and the funding to obtain access to a reliable platform has often not been available.

Within blended or mixed instruction, the levels (compared to fully online-learning) of time–place independence decreases, the collaborative network becomes less extensive, and instruction begins to incorporate traditional face-to-face elements (Harasim, 2000). That is, when online-learning is mixed with some degree of direct face-to-face instruction between participants and the instructor, blended or mixed learning is achieved. There can be different levels of blends too. For example, the School of Education at the university where I have taught on the island of Trinidad in the Anglophone Caribbean has in the past recommended a 30-70 blend. A weak blend would utilize online modalities for 30% of instructional time and face-to-face modalities 70% of the time. A strong blend with similar proportions of online and face-to-face components would comparatively utilize online modalities 70% of the time.

Mixed or blended instruction permits the instructor to tailor a face-to-face: online blend ratio to suit students’ learning needs. In this way, instructors can negotiate learning methodologies and mount a critical resistance against a *carte blanche* application of online-learning (Clegg et al., 2003). In my experience with blending, instructors were left with the option of where along the 30-70 blend ratio they would formulate their classes. The final blend depended on both the instructor’s and the students’ comfort with online-learning as a new educational technology, as well as access to efficient, stable, regularly available internet tools. Blended modalities can also help to democratize education by being “not less compelling and motivating than its campus [face-to-face] counterparts” (Larreamendy-Joerns & Leinhardt, 2006,

p. 573). For instance, the definition of blended learning might be reconceptualized as outcomes as opposed to instructional modalities. Here, face-to-face and online students can be offered the same instructional experiences with the right to access these in any blended combination that they choose according to their needs (and taste) and so maximize the social and economic benefit gained by the community (Hiltz & Turoff, 2005). This can be a worthwhile practice given that the quality of the online facility is not the only contributing factor, “the personality and learning styles of students who take online courses may also contribute to the comfort level with online-learning which allows these students to learn at least as much as the on ground classes” (Cantrell et al., 2008, p. 554). This is supported by the finding that student satisfaction—rather than their locus of control and the majority of their demographics (gender, age group, residency status, academic major, GPA, and weekly working hours)—contributes most highly to retention in online-learning (Levy, 2007). In fact, as new digital media emerge, their new configurations tend to be less determined by technological demands and they tend to develop functionalities that have been determined over time by social relations (Adam, 1998). That is to say that pervasive adoption of ICTs does not occur simply because a technology is easy to use but more so because it serves the needs of users (Adams, Nelson, & Todd, 1992; Davis, 1989). Allowing students pursuing blended instruction to choose the level of their blend as Hiltz and Turoff (2005) suggest could permit students to each select, and tweak if necessary, an ideal mix of face-to-face and online activities to suit their individual learning needs, capacities, and preferences. This can be especially worthwhile to students like mine given that many of them register for programs taught using blended or online-learning modalities because of the lure of not having to drive long distances to attend face-to-face classes. However, my experience has taught me that most of those students are largely unaware of what blended or online-learning entails and have in the past ended up clamoring for increased face-to-face interaction mid-semester. They usually underestimate their ability to deal with the sterility, increased independence, and digital navigation within an online classroom. They think that it is as simple as being able to send an email or login to Facebook—the usual extent of their online or digital presence in their regular, everyday lives.

There are studies which indicate blended instruction to be the most advantageous learning modality (U.S. Department of Education, Office of Planning, Evaluation, and Policy Development, 2009) compared with online or face-to-face instruction. Within a blended paradigm, the strengths that the face-to-face modality offers to the teaching–learning process compensate for the weaknesses of the online component (Osguthorpe & Graham, 2003). It may be worth noting though that “blended learning has added value only when facilitated by educators with high interpersonal skills, and accompanied by reliable,

easy-to-use technology” (Derntl & Motschnig-Pitrik, 2005, p. 111). Researches within the Caribbean that consider blended modalities recognize that the expert knowledge of the instructor is crucial (Bernard & Thompson, 2003); that there is a cultural proclivity toward face-to-face interactions (Kuboni & Martin, 2004; Morgan, 2000); and that instructors resist online-learning due to their comparatively new exposure to these instructional processes (Chandra et al., 2000) as well as their perceptions of a loss of intellectual property rights (Gulati, 2008). Other issues with online modalities regionally include the retarded interconnectivity between the island states, and the need to make ICTs more affordable through a reduction of duties and taxation by policy determination (Chandra et al., 2000).

Still, even with all of its constraints within Caribbean spaces, fully online-learning may be the most cost-effective instrument to service the region (Marrett, 2006). Blended modalities by their sheer inclusion of face-to-face elements cannot adequately service at distance populations with no ability to access the brick-and-mortar locations of the matriculating institution. This is a serious consideration given the way territories and their populations are scattered across the region. Within the relatively low-tech Caribbean, traditional technologies such as television, radio, and text-based materials may play a role in providing education at a distance to rural and disadvantaged populations (Gulati, 2008). Successful examples of such projects include Proformação in Brazil (Bof, 2004) and Telesecundaria in Mexico (Gulati, 2008). In fact, internal and external influences necessitated a central role for a text-based pre-package in University of the West Indies’ (UWI) distance programs (Kuboni & Martin, 2004) up until my personal experience as a course coordinator to 2011. With the potential to increase access many fold, and to cater to a variety of training needs across a broad socio-economic clientele, online-learning can offer great promise toward “a highly literate and competitive workforce despite the region’s financing constraints” (Smith, 2011, p. 12).

Merging “online” and “learning” to look at “online-learning”: Educational visions. The concept of online-learning has been explicated beyond simply learning that occurs through a blended or fully-online mode into three educational visions (Larreamendy-Joerns & Leinhardt, 2006).

First, *presentational views* enhance static text by using multimedia to present visuals of abstract concepts and their applications. Presentational views can warm the sterility of online spaces through real-time synchronous collaborations, or by providing a friendly face and voice through vodcasts in asynchronous modes (Larreamendy-Joerns & Leinhardt, 2006). I have employed free vovkis in which I use my voice to animate a cartoon figure to engage my students. Given that the accents and speech of the Caribbean are non-mainstream, hearing a familiar sounding voice can help to make the online teaching–learning space more inviting.

Second, within the culturally responsive and socially constructivist *epistemic-engagement view*, novices are inducted into a disciplinary community through collaborations with experts that are grounded in the epistemological beliefs of the discipline (Larreamendy-Joerns & Leinhardt, 2006). For instance, I have been in the past a member of a team of teacher-educators utilizing online modalities to mentor primarily science and mathematics teachers as they learn how to integrate and deliver a STEM (Science, Technology, Education and Mathematics) Curriculum (“Stemagination,” 2013; please note that at the writing of this article, the name “Stemagination” has since been trademarked by a United States non-profit group set up to enhance the participation of girls in STEM, see <http://stemagination.org/>). As another example, one of my graduate students has patterned his dissertation (see Coker, 2013) after the EcoMUVE project (Harvard Graduate School of Education, n.d.). EcoMUVE demonstrates epistemic authenticity by allowing students to develop causal reasoning within a Virtual Learning Environment (VLE) where participants can investigate cases of environmental abuse utilizing processes similar to those employed by real scientists.

In the third view, Intelligent Tutoring Systems (ITS) measure actual student routines against an ideal performance model of how students problem solve and learn. In this way, ITS can deliver feedback and recommendations on how learning can be improved (Larreamendy-Joerns & Leinhardt, 2006). ITS though are presently prohibitively expensive to many institutions and are also unable to mimic activities which cannot be represented by production rules (Larreamendy-Joerns & Leinhardt, 2006). These particularly include complex adaptive activities and spaces. For example, face-to-face classrooms (Kelly, 1994) and subject domains such as evolutionary Biology are ecological and evolutionary like real organic systems (Larreamendy-Joerns & Leinhardt, 2006) and defy simple production rules. Indeed, skilled instructors, who are knowledgeable practitioners of their discipline, have a deep, sometimes organic appreciation of how to steer activities, questions, and interactions within the complexity of regular learning spaces to promote successful knowledge creation. This is as yet almost impossible to copy through the use of ITS.

A glimpse at a possible futuristic model of “online-learning”: Networked individualism. The form and shape of online-learning globally and within the Caribbean is progressing and changing at an almost unprecedented pace given the speed with which the ICTs on which they are predicated are also developing. This section takes a look at the possible face of online-learning in the future.

When “online” and “learning” collide, it can birth a complex adaptive space that is inherently networked. Such space I suggest gives rise to a networked individualism as described by Rainie and Wellman (2012). Networked individualism is a new social operating system (Rainie & Wellman, 2012):

Like most computer operating systems and all mobile systems, the social network operating system is *personal*—the individual is at the autonomous center [iCulture] just as she is reaching out from her computer; *multiuser*-people are interacting with numerous diverse others; *multitasking*-people are doing several things; and *multithreaded*-they are doing them more or less simultaneously. (Rainie & Wellman, 2012, p. 7)

These networked individuals might be thought of as points within a connected hive-mind (Kelly, 1994). Within this hive-mind, ICTs push rapid socio-political and economic changeability necessitating new paradigms of instruction to foster students capable of “improving their performance by creating new ways of working and developing the new capabilities needed for that work” (Resnick & Williams-Hall, 1998, p. 108). Students must hence be skilled toward meta-cognition, self-monitoring, and adaptation (Resnick & Williams-Hall, 1998). Excitingly enough (in my estimation), while the “online” of online-learning revolutionizes society, creates new types of learners, and obligates new learning competencies, it holds simultaneous potential to create iCultured learning spaces capable of alleviating the needs of such a new dispensation.

Imagine an environment that is constantly changing. Imagine an environment where the participants are building, creating, and participating in a massive network of dozens of databases, hundreds of wikis and websites, and thousands of message forums, literally creating a large-scale knowledge economy. Imagine an environment where participants are constantly measuring and evaluating their own performances, even if that requires them to build new tools to do it. Imagine an environment where user interface dashboards are individually and personally constructed by users to help them make sense of the world and their own performance in it. Imagine an environment where evaluation is based on after-action reviews not to determine rewards but to continually enhance performance. Imagine an environment where learning happens on a continuous basis because the participants are internally motivated to find, share, and filter new information on a near-constant basis. (D. Thomas & Seely Brown, 2011, pp. 106-107)

Indeed, imagination might not be necessary as this utopist learning-space is suggested to already exist in massively multiplayer online games (MMO; D. Thomas & Seely Brown, 2011), and may be the aspiration of MOOCs. Though many of my adult student-teachers currently in higher education may be unfamiliar with MMOs, their teenage students are already active participants. Within Trinidad and Tobago, since 2009 all students moving into secondary school at age 11/12 have been provided with free laptops by the Government. A wider cross-section of our population now enjoys access to computers because the device is not only accessible to the child to whom it was assigned, but to their entire family when children take their devices home to complete school tasks. The biggest complaint surrounding the use of these laptops that I have heard from my

student-teachers is their students’ fascination with gaming in all forms, including MMOs.

Networked individualism might be closer to becoming a Caribbean possibility than many envisage and online-learning’s seemingly secure and expanding future suggests that its role might grow beyond the simple delivery of academic course content. Indeed, like face-to-face schools, online-learning may hence also become responsible for securing broad educational aims. For individuals to flourish in the world of the 21st century, Gardner (2008) suggests the following aims of education. He holds firstly that individuals will require expertise in a discipline. Individuals will also need to be able to assemble knowledge from varied places and synthesize it into a relevant whole under some useful theme. In addition, as computers take over rudimentary and algorithmic tasks, schools will need to produce graduates who are creative and revolutionary in their thinking. Furthermore, as globalization decreases our proximity to each other and increases our awareness of our differences, individuals will need to display a new respect for diversity. Lastly, “as workers and citizens,” individuals will be required to act ethically and to do the right thing within given circumstances even if this does not necessarily promote their own self-interest (Gardner, 2008, pp. xiii-xiv). Individuals will also need to learn how to learn, and how to secure mental, emotional, and physical flexibility by taking time to rejuvenate (Yogi Bhanjan & Gurucharan Singh Khalsa, n.d.) amidst the relentless change of this century.

Within this section, the article discussed the tools of online-learning and what online-learning might look like generally, and within a Caribbean experience. The experiences cited highlight that the efficiency of online-learning as a teaching–learning instrument within a Caribbean context is mitigated by the availability of tools; the comfort of both students and their instructors with digital technologies; and the assessment orientation of the learning culture. We also recognized a younger group of learners emerging who may enjoy greater access to, as well as skills to utilize, digital technologies, and whose competencies may craft an expanded role for online-learning in teaching and learning in the future Caribbean. The discussion goes on to consider some environmental factors that may impact on the success of attempts at online-learning generally, and particularly within a Caribbean context.

Environmental Factors

Like the more traditional face-to-face modality, critical success indicators of online-learning include good administration, functionality, appropriately qualified faculty, appropriate support services, effective course evaluation, and high-quality instructional design and interactions (Ally, 2011; Ma, Vogel, & Wagner, 2000 and Betz & Johnson, 2000 as cited in Chen et al., 2008). Note that the last two factors have been found to contribute most heavily to the success of

online-learning (Chen et al., 2008). Indeed, faculty pursuing online instruction require training in web-teaching, familiarization with useful digital teaching tools, accommodating workload adjustments, and rewards for moving courses online (Billings, 2000) with a transformative efficiency that resists simply creating a repository of notes (Su, Bonk, Magjuka, Liu, & Lee, 2005). Other issues surrounding the adoption of online-learning include negative public opinion regarding its quality, along with the difficulty of community learning and empowerment within an online space (Larreamendy-Joerns & Leinhardt, 2006). In addition, the preparation of online-learning spaces are estimated to take 10 times the hours of face-to-face classes (Bentley, Cook, Davis, Murphy, & Berding, 2003), with the preparation of the ITS of CAI coming in at a rough 300-times factor (Murray, 1999).

Consider too the findings of Profile 2000, a report from the international "Virtual Society? Programme". It holds the remit "to research the implications of the continued massive growth in new electronic technologies" (Economic and Social Research Council ESRC, 2000, p. 4). It suggests that the current rapid rate of expansion of internet usage may not continue, (i.e., a glass ceiling to ICT adoption exists and this is supported too by Gurstein, 2003), given that overall usage patterns mask patterns of use by specific populations, including those in which usage has declined (with growing data too to support uneven use of ICTs see Castells, 2001). It further finds that populations utilize new technologies to supplement their methods of organization and activities rather than replace them outright. Third, it reports that the use of some virtual systems actually promote non-virtual social practices. For example, student face-to-face interaction was found to increase in scenarios where VLEs were used to enhance learning. Fourth, different sections of the population hold different aversions to the use of technology so that both the claims of the infallibility as well as the deleterious consequences of VLEs need to be carefully considered. Last, the meaning and usefulness ascribed to a given technology is determined by the local context, such as the economic and educational profile, of users (Economic and Social Research Council ESRC, 2000). It is understandable then that online-learning as an innovation may be accepted by users in a step-wise fashion and to varying degrees (G. E. Hall & Hord, 2006), if at all. Indeed, the real impact and utility of online-learning as an innovation is difficult to measure as ICTs can speed-up, convolute, and hide change, making cogent analysis regarding its use complicated (Clegg et al., 2003).

Even so, online-learning has been widely embraced for improving versatility, learning, speed, interactivity, performance, and autonomy among student learners (Chen et al., 2008). Etherington (2008) argues that such idealism about online-learning might be misplaced and suggests a variety of factors that could have contributed to these erroneous inferences regarding online-learning's utility. These factors include an unexamined acceptance by users of the advertised efficiency of technologies, and the social

science research reporting format of evaluation documents. A social science reporting format might make the content of records regarding the utility of online-learning difficult to access by the same clients whose relationship with online-learning is being reported. This might stymie their ability to make cogent feedback as to how well their experiences with online-learning have been catalogued. Furthermore, more contextualized qualitative data may better represent users' personal experiences than the quantitative measures generally used to measure the effectiveness of technology within classrooms. Hence, caution is advised toward unplanned and carte blanche applications of online-learning.

Even as learning technologies become more sophisticated and continue to promote online-learning, there is a call for an increased critical assessment of its impact on students' lives in the present and into the future (Etherington, 2008). Indeed, within the Caribbean region, trade liberalization has allowed foreign competition into the online-learning market and introduced a new worry over the erosion of cultural practices and national values (Larsen et al., 2002; Louisy, 2004). There is heightened concern over these issues given the already urgent need for leaders to improve the marketing of the regions' cultural assets (Louisy, 2004). As such, I now consider some environmental factors (globalization, democratization, QA, institutional policy, and the rise of mega-universities) that can impact the growth of online-learning in the Caribbean region.

Globalization Demands That You Had Better Start Online-Learning or Else

A proliferation of internet textbooks, academe's marked focus on online-learning in scholarly research journals, and the entry into online-learning by major universities such as Columbia, Yale, and Stanford (Larreamendy-Joerns & Leinhardt, 2006) submit that "online-learning is no longer peripheral or supplementary; it has become an integral part of mainstream society" (Harasim, 2000, p. 59).

Clegg et al. (2003) propose that this ubiquitous shift to online-learning seems to not always be primarily driven by the needs of learners and that policy discourses, possibly enticed by online-learning's offerings, assume "particular linkages between education, globalisation, competitiveness and e-Learning" (p. 47). They further suggest that the promotion of online-learning may be fuelled by "a passive acceptance of globalisation paradigms" (p. 42), and the presentation of ICTs as "co-terminus with the mechanisms of globalisation" which can lead to conclusions that ICTs are both the "cause and a consequent driver for change within Higher Education" (p. 41).

However, early advocacy for globalization theories date back to the 1950s and pre-date major technological developments (Robins & Webster, 1999, as cited in Clegg et al., 2003. See also Baldwin & Martin, 1999). Moreover, there is

increasing suggestion that globalization is being fuelled not by ICTs, but by other factors such as the types of labor required within markets (Castells, 2000, as cited in Clegg et al., 2003). Arguably, globalization enjoys mythical status and its use as “the master category which uniquely captures both the expansive dynamic of modernity and the transformations in the very social texture of space itself” (Rosenberg, 2000, p. 119) is cautioned against (Clegg et al., 2003, p. 44). Such reckless use risks turning globalization into a metanarrative—“a totalisation of economic, political and cultural phenomenon that . . . have rendered the nation state and its components impotent” and against which resistance is futile (Clegg et al., 2003, pp. 43-44). It might be erroneous then to suggest that online-learning is necessitated within all scenarios of higher education because of globalization. Hence, there might be reason for deep concern that moves toward online-learning are not primarily driven by the pedagogical needs of learners or impacting contextual factors as face-to-face teaching methodologies tend to be. Clegg et al. (2003) therefore call for a deconstruction of the proposed inevitability of online-learning within higher education. That is to say that claims of globalization are possibly not enough to validate heavy thrusts into online-learning—that the consideration of the needs of learners, especially their contextual needs—might always be the first consideration.

Certainly, the independent states of the Caribbean region seem continuously “compelled by the forces of globalization to change the way they exercise their sovereignty” and are “constrained by international norms, law, political obligation and opinions in world markets” (Smith & Naim, 2000, as cited in Louisy, 2001, p. 426). The Caribbean is still laboring to be a “global partner in international policy making” (Louisy, 2004, p. 285) and consideration of the contextual needs of Caribbean learners is often neglected within globalized online-learning paradigms and systems.

A critical pedagogy can help to deconstruct one-size-fit-all models of online-learning through programs of contextually responsive, student-centered instruction delivered by skilled teachers with the freedom to be creative with their teaching (Clegg et al., 2003, p. 39). A critical theoretical perspective then can deconstruct considerations of online-learning as “*the*” method of instruction, as well as whom is its primary audience. In fact, efforts to promote technology access within developing countries, as are those of the Caribbean, has been found to largely benefit the “rich, upper middle classes and the urban elite” (Gulati, 2008, p. 12). Indeed, the emergence and evolution of technologies is not a neutral affair arising solely from a need for their technical capacities; historic and social relationships also impact (Clegg et al., 2003). That is, “. . . there are social, political, economic, and ethical assumptions and implications in what appear to be simple actions of design and instruction” (Larreamendy-Joerns & Leinhardt, 2006, p. 567). In addition, for Caribbean countries operating in a postmodern era and for whom, unlike the G8 countries, local and global are

not synonymous (Louisy, 2004), increasing antagonism between native and global agendas may be softened by a comparative-education framework (Louisy, 2001).

Neither globalization as metanarrative nor online-learning’s prolific nature necessarily justify it as panacea to the expansion (and really the democratization through expanded access) of educational services across all contexts.

Democratization and a Right to Education

The Universal Declaration for Human Rights expects that “higher-education shall be equally accessible to all on the basis of merit” (United Nations General Assembly, 1948, Article 26 paragraph 1). Online-learning can potentially address a global demand for higher education services by increasing access to experts, curriculum, and learning materials (Geith & Vignare, 2008). The cause of online-learning in higher education is being advanced by an improvement in digital technologies, the increasing pace of life, and a decrease in funding for physical resources (Karber, 2002, as cited in Cantrell et al., 2008). There is also an expanding need for continuing education as technologies, knowledge, and jobs evolve. Within the Caribbean, an unevenness of access to higher education across time has created a post-secondary population at a variety of training stages. The flexibility of learning-that-is-online means that the entire population of qualified citizens, and not just recent graduates of the secondary school system, can be offered access through full and part-time, and blended or online-learning (Miller, 2007).

I advocate the democratization of educational services according to Geith and Vignare’s (2008) adaptation of Tomasevski’s (2001) 4-A Framework of the Human Rights Obligations which propose both rights *to* education and rights *in* education. A right *to* education makes it *available* (through fiscal allocations for schools and teachers) and *accessible* (by eliminating barriers that may be legal, administrative, discriminatory, or economic for example). Rights *in* education provide *acceptability* (through measures that attract clients such as the language of instruction and good QA) and *adaptability* (to varied populations such as minorities, indigenous peoples, and workers; Geith & Vignare, 2008). Democratization is especially crucial in establishing equity in online-learning given that ICT culture “remains young, middle-class, male and western based” (Holderness, 1998, as cited in Marrett, 2006, p. 3).

I further posit that within such definitions, a democratic education is also necessarily one of quality.

Assuring Quality-Fitness for Purpose

This article considers quality as fitness for purpose (Miller, 2002). The region’s “history of colonization, economic openness, high unit costs, and the greater production and marketing capacity of bigger countries” creates a real risk that the

Caribbean becomes a consumer of a culturally irrelevant model of online-learning (Chandra et al., 2000, p. 6; Marrett, 2006, p. 2), or the (continued) victims of cultural imperialism (Evans, 1995, as cited in Marrett, 2006, p. 2). In addition, the competition to deliver higher education services within the region has been heightened by contracted economic growth since 2008, an increased number of secondary school graduates, and increased competition due to the liberalization of higher education and the use of ICTs in providing flexible learning experiences (The UWI, 2012). In Trinidad and Tobago since 2004, The Government of the Republic of Trinidad and Tobago (GORTT) through their Government Assistance for Tuition Expenses (GATE) program increased their 50% stipend toward undergraduate degrees to 100%. They also currently offer a 50% stipend toward postgraduate degrees obtained from a regional source (Wilson, 2012). These subventions increased the clamor for higher educational opportunities on the island where the UWI continues to be the most prolific higher education provider. Coupled with a dearth of training spaces, the Caribbean threatens to become a combat zone for higher education procurement necessitating policy development to manage the market (Tewarie, n.d.). QA systems are hence desperately needed to ensure that the region does not become a dumping ground for sub-standard services (Larsen et al., 2002; Leo-Rhynie & Hamilton, 2007), and to promote quality higher education as a competitive export.

Quality in higher education includes all of its functions and activities; demands international networks of people producing, sharing, and using knowledge; and necessitates the hiring of high-quality staff and their continuous professional development (UNESCO, 1998). Some of the issues feeding into a quality debate in the Caribbean region include expanded access, equity to different populations (gender, the differently-abled, etc.), relevance (social, political, economic, cultural), and funding (regional governments spend an average 15% of their budgets on higher education: an amount substantially higher than that of developed countries; Smith, 2011).

Regionally then, QA needs to consider an improvement of teacher education to help staff to effectively design and deliver online courses; adequate research to promote the scholarship of teaching and learning within the Caribbean; the accountability of educational systems, and the improvement of standards and outcomes (Gift, Leo-Rhynie, & Moniquette, 2006; Leo-Rhynie & Hamilton, 2007). The Caricom Single Market and Economy (CSME) further spotlights the need for a regional accreditation system to ease the movement of faculty, researchers, and students; and to address the transfer of credits, and the retention of intellectual property rights (Hosein, Chen, & Singh, 2004, as cited in Gift et al., 2006; Miller, 2007; Smith, 2011).

Indeed, Belize, Guyana, Jamaica, Trinidad and Tobago, Barbados, St. Kitts, and Suriname have formed local QA accreditation councils guided by the mechanism for

accreditation, equivalence, and articulation established by the CARICOM. Smaller regional states with fewer peoples and economic resources can consult with these for required expertise in developing their own systems (Gift et al., 2006). As higher education continues to be grown within the region, a determination of institutional policy becomes essential.

Developing Institutional Policy as a Priority Action for Change

Regionally the terms “higher education” and “tertiary education” tend to be used synonymously (Peters, 1993). Trinidad and Tobago’s Vision 2020 Sub-Committee Report on Tertiary Education define it as “the teaching and learning process that occurs following the completion of secondary education and provides academic credits and competencies that lead to certificates, diplomas and degrees from universities, university colleges, polytechnics, community colleges and similar institutions” (as cited in Tewarie, n.d., p. 1). This definition is considered reflective of post-secondary education in the Caribbean (Howe, 2003; Peters, 1993; Vision 2030 Jamaica National Development Plan: Education Draft Sector Plan Final Draft, 2009-2030).

Within the Caribbean higher education institutions are either state-regulated, national, off-shore, or private entities serving national populations (Ali, 2008). Still, 60% of the approximate 150 higher education institutions within the region are fully governmental (Tewarie, n.d.) so that “in the Caribbean tertiary education remains predominantly the business of the public sector” (Howe, 2003, p. 66). As example, the Jamaican Government funds 65% to 80% of higher education with households in 2003 spending 16% of total expenditure on these services (Vision 2030 Jamaica National Development Plan: Education Draft Sector Plan Final Draft, 2009-2030). Simultaneously, the UWI, mandated to develop the region’s human resource and run on subventions from the public purses of contributing governments, is presently threatened by the substantial increase in online offerings, and decreasing market-share and funding due to competition from both regional and extra-regional sources within both public and private higher education. This has increased the difficulty in “attracting high-quality students, staff and faculty in selected areas” (The UWI, 2012, p. 36).

As previously mentioned, all of the Anglophone Caribbean nations belong to The CARICOM which is charged with the development of the region. Though guided by the policy initiatives of CARICOM, within member states governance of higher education is coordinated by the politically elected or negotiated government with support from its representative educational bureaucracy (Ali, 2008; Roberts, 2003). CARICOM subscribes to the EFA agenda and has predicated developmental goals on a vision of The Ideal Caribbean Person (UNESCO, 1997). EFA initiatives focus more so on primary and secondary than on higher education. Up to 2013, within the region only Barbados and Trinidad and Tobago

had achieved free, universal primary, secondary, and tertiary education. However, due to new economic constraints, from the 2014/2015 academic year, Barbadian students will be expected to pay the tuition costs of their higher education degrees. In adopting this initiative, the Barbados government hopes to be fairer in how it allocates funding to the different levels of the education system by smoothening out its inordinately lower economic support for levels of education outside of higher education (“Bajan Students,” 2013). Understandably then, regional educational policy seems to be more strongly focused on the primary and secondary levels with no umbrella-document to guide online-learning initiatives at the higher education level. While literature on higher education in the region may be extensive, there is still need for the rational and strategic development of the higher education sector (Tewarie, n.d.) through policy determination.

Within the circumstances, Tewarie (n.d.) has posited “A Concept Paper for the Development of a Caricom Strategic Plan for Tertiary Education Services in the Caricom Single Market and Economy (CSME).” Along with Ali (2008), it supports the utility of the World Declaration and Framework for Priority Action for Change and Development in Higher-Education produced by UNESCO in 1998 and ratified by communiqué 11 years later (UNESCO, 2009). Even so, I still re-iterate that in the interest of a culturally relevant and developmentally efficient Caribbean model, policy determination might be crucial to direct regional higher education initiatives within a liberal environment.

The Rise of the Big, Bad Mega-Universities

As higher education providers use online programs to expand their client base to remain competitive and ensure their survival (Hiltz & Turoff, 2005), cross-border education is becoming one of the fastest growing sub-sectors with some 30% of students worldwide holding registration in such private establishments (Smith, 2011). These institutions have made higher education more accessible to a wider berth of Caribbean peoples by increasing the number of training spaces, and by reducing cost through competition as well as state and private sector funding (Ali, 2008; Leo-Rhynie & Hamilton, 2007). An increase in private providers within the region sustains the view that there are citizens willing and able to privately fund their personal higher education (Smith, 2011). However, “the vast majority [are] left un-served” (Miller, 2007, p. 9).

Within such a liberalized environment, there are expectations that multiple higher education institutions will be replaced by a substantially reduced number of providers or mega-universities (Hiltz & Turoff, 2005) given that

the startup and maintenance costs of sophisticated online environments can be prohibitively expensive. This situation may lead to a concentration or monopoly of curriculum development within a few powerful institutions [e.g. mega-universities], thus reducing the diversity of perspectives and

solutions to educational problems. (Larreameydy-Joerns & Leinhardt, 2006, p. 593)

However, mega-universities can be reconceptualized as international networks and partnerships and so help to promote a culture of peace through intercultural dialogue and humanistic practices. In this way, mega-universities can be used to span the development gap through cross-border knowledge transfer, especially so toward the direction of less developed countries and in so doing help to stem the deleterious effects of the brain drain (Miller, 2007; UNESCO, 2009). Ironically, an excess of 70% of citizens with higher education from Jamaica, Trinidad and Tobago, and Haiti reside outside of the region (The World Bank, 2013) even as their remittances help to prop their home economies (Miller, 2007).

The UWI may be the Caribbean’s mega-university. The UWI enjoys physical campuses in Barbados, Trinidad, and Jamaica. It is the only truly cross-border, regional university (Ali, 2008; Howe, 2003; Tewarie, n.d.; Woodall, 2011), and the most prolific higher education provider within the Caribbean. Its fourth campus, the UWI Open Campus (UWIOC), is virtual and was started primarily to broaden higher education access throughout the region (Fergus, Bernard, & Soares, 2007; M. Thomas & Soares, 2009; Thurab-Nkhosi, 2007, 2010). In combination, the four campuses of the UWI serve some 16 nations across the Anglophone Caribbean (The UWI, n.d.). Indeed,

The reality that brought UWI into being has not disappeared with the establishment of national universities. That reality is that no single country can by itself develop and sustain the critical mass of human and financial resources needed to offer high quality higher degree programmes in the range of disciplines and multidisciplinary endeavours that are needed by the society or that which is within the capabilities of its people. While the nationalism of each country, enhanced by insularity, will entertain such a notion the harsh realities of implementation and operation will eventually dispel such a notion. (Miller, 2007, p. 11)

Admittedly, education in the Anglophone Caribbean over the last 150 years has produced more talent than the region has the ability to absorb (though arguably not more than it needs to promote its developmental needs). Hence, higher education services might consider not just regional developmental goals but also the needs of its people to be lucrative hires within other markets where they might seek a livelihood (Miller, 2007). Finally then, the article weighs in on the utility of online-learning for Caribbean higher education as it concludes.

Conclusion: An Adaptation Particular to the Caribbean

Claims of success with online-learning have been made internationally (U.S. Department of Education, Office of Planning, Evaluation, and Policy Development, 2009) and

have been echoed within the Caribbean (Bernard & Thompson, 2003; W. M. Hall, 1996). This article has highlighted that there are many contextual factors that need to be weighed in any pronouncement regarding the utility of online-learning regionally (and I daresay within any context). Consider that recently Trinidad and Tobago was thrown into nationwide blackness (Kowlessar, 2013) and that online-learning programs have been threatened in the past by power-outages in Jamaica (W. M. Hall, 1996), and poor computer facilities in UWIDEC (UWI Distance Education Centre; Kuboni & Martin, 2004), the UWI's Open Campus' (UWIOC) predecessor. An introduction of online-learning in the Caribbean then can certainly provide many research opportunities that can comment on the expectations of improvement and success that VLEs, such as stand-alone online-learning, are expected to bring to higher education pedagogy (Clegg et al., 2003).

Few may argue that student-learning is not central to good pedagogy: whether the modality of instruction is face-to-face, blended, or fully online. Online-learning then may simply be a tool within the arsenal of skilled teachers. Concerns arise though when it is posited as “*the*” tool because of globalization, or the considered inevitability of technological futures of all populations without acknowledging that there is a “struggle over the terms and shape of the media adopted” (Clegg et al., 2003, p. 39). There is some worry then surrounding the homogeneity threatened by carte blanche applications of online-learning. Admittedly, this is not necessarily a peril peculiar to online-learning, but rather so to any pedagogical practice that is less than critical of the indigenous and contextual considerations which inform learning, and within which learners must then exercise/apply their newly acquired knowledge. Within a liberalized environment though where rich, global institutions are the ones that possess the funding to expand higher educational services via online-learning, small adopting states such as those of the Caribbean region must be wary of imperialism that can threaten their indigenous cultures. This is especially important within the Caribbean given that all Anglophone territories in the region, as postcolonial states, already wrestle with such concerns.

Within the particular cultural space of the Caribbean then, regional higher education could immensely benefit from policy determination to guide the expansion of online-education. Scholarly research from a critical, comparative-education perspective might also help to ensure that online-learning's adoption and incarnation is contextualized to Caribbean needs and development. Moreover, while it would be idyllic if Caribbean higher education was financially sustainable, given the crucial nature of training to the region's development, government sustenance may be the only way to ensure the democratization of higher education services. Tomasevski's (2001) four pillars of broad availability, accessibility, acceptability, and adaptability may be able to guide such aims toward an increased democratization of higher education services.

Caribbean society is an oral one in which our traditions are passed along through social interactions among members. Our society is very much oriented toward communities and their growth; it is not an individualistic society. These cultural ways of being, knowing, and doing have probably contributed toward the proclivity of Caribbean peoples for the interpersonal, direct interaction of face-to-face modalities. Such a proclivity coupled with the general low-tech nature of most Caribbean societies may help to explain why blended instruction has so far proven more effective at securing pedagogical aims. However, online-learning, possibly through the UWI as mega-university, seems more able to democratize higher education across the region given the way that peoples are scattered geographically across territories. If it continues to expand though, online-learning might find it challenging to deliver life-skills necessary to secure the broad educational aims which help to prepare students to humanely tackle the messy problems, with seemingly no clearly defined answers, which appear to be the hallmark of this networked individualistic 21st century.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research and/or authorship of this article.

References

- Adam, A. (1998). *Artificial knowing: Gender and the thinking machine*. London: Routledge.
- Adams, D. A., Nelson, R. R., & Todd, P. A. (1992). Ease of use, and usage of information technology: A replication. *MIS Quarterly*, 16, 227-247.
- Ali, E. (2008). *Higher Education in the Caribbean: Evaluation, Accreditation, Qualification and Certification Systems*. CD ROM: Trends in Higher Education in Latin America and the Caribbean. UNESCO Institute of Higher Education for Latin America and Caribbean (IESALC).
- Ally, M. (2011). Foundations of educational theory for online learning. In T. Anderson & F. Elloumi (Eds.), *Theory and practice of online learning* (2nd ed., pp. 3-32). Athabasca, Alberta, Canada: Athabasca University Press.
- Anderson, T. (2011). Toward a theory of online learning. In T. Anderson & F. Elloumi (Eds.), *Theory and practice of online learning* (2nd ed., pp. 33-60). Athabasca, Alberta, Canada: Athabasca University Press.
- Bajan students must now pay at Cave Hill. (2013, August 13). *The Barbados Today*. Retrieved from <http://www.barbadostoday.bb/2013/08/13/bajan-students-must-now-pay-at-cave-hill/>
- Baldwin, R. E., & Martin, P. (1999, January). *Two waves of globalisation: Superficial similarities, fundamental differences* (NBER Working Paper No. 6904). Cambridge, MA: National Bureau of Economic Research (NBER).

- Bentley, G. W., Cook, P. P., Davis, K., Murphy, M. J., & Berding, C. B. (2003). RN to BSN programme: Transition from traditional to online delivery. *Nurse Educator*, 28(3), 121-126.
- Bernard, M., & Thompson, C. (2003, June 30-July 2). *Integrating web-based instruction and classroom teaching: Case studies from the Caribbean*. Paper presented at the IASTED International Conference Computers and Advanced Technology in Education, Rhodes, Greece.
- Billings, D. M. (2000). A framework for assessing outcomes and practices in web-based courses in nursing. *Journal of Nursing Education*, 39(2), 60-67.
- Bof, A. M. (2004). Distance learning for teacher training in Brazil. *International Review of Research in Open and Distance Learning*, 5(1). Retrieved from <http://www.irrodl.org/index.php/irrodl/article/view/172/387>
- Bransford, J. D., Brown, A. L., Cocking, R. R., & National Research Council. (2004). *How people learn: Brain, mind, experience and school*. Washington, DC: National Academy Press.
- Cantrell, S. W., O'Leary, P., & Ward, K. S. (2008). Strategies for success in online learning. *Nursing Clinics of North America*, 43, 547-555. doi:10.1016/j.cnur.2008.06.003
- Caribbean. (n.d.). Retrieved from <http://en.wikipedia.org/wiki/Caribbean>
- Caribbean Community. (n.d.). Retrieved from http://en.wikipedia.org/wiki/Caribbean_Community
- Caribbean Community (CARICOM) Secretariat (2001). *Revised treaty of Chaguaramas establishing the Caribbean Community including the Caricom Single Market and Economy*. Retrieved from http://www.caricom.org/jsp/community/revised_treaty-text.pdf
- Castells, M. (2001). *The internet galaxy*. Oxford, UK: Oxford University Press.
- Chandra, R., Stahmer, A., Allen, M., Anderson, L., Armstrong, D., Austin, I., . . . Miller, E. (2000, July 27-28). Proceedings of the University of the West Indies Small States Conference 2000, Ocho Rios, Jamaica. Retrieved from http://dspace.col.org/bitstream/123456789/209/1/_2_conf_proc.pdf
- Chen, N.-S., Lin, K.-M., & Kinshuk. (2008). Analysing user's satisfaction with e-learning using a negative critical incidents approach. *Innovations in Education and Teaching International*, 45, 115-116.
- Clegg, S., Hudson, A., & Steel, J. (2003). The emperor's new clothes: Globalisation and e-learning in higher education. *British Journal of Sociology of Education*, 24, 39-53. doi:10.1080/0142569032000043597
- Coker, K. (2013). *The effect of a multi-user virtual environment on student causal reasoning ability, ecological worldview and conceptual change* (Unpublished master's thesis). The University of the West Indies, St. Augustine. Retrieved from <http://uwispace.sta.uwi.edu/dspace/bitstream/handle/2139/21611/Kester%20Coker.pdf?sequence=1>
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance. *MIS Quarterly*, 13, 319-340.
- Derntl, M., & Motschnig-Pitrik, R. (2005). The role of structure, patterns, and people in blended learning. *The Internet and Higher Education*, 8, 111-130. doi:10.1016/j.iheduc.2005.03.002
- Economic and Social Research Council ESRC. (2000). *Virtual society? The social science of electronic technologies, Profile 2000*. Oxford, UK: Said Business School, University of Oxford.
- Etherington, M. (2008). E-learning pedagogy in the primary school classroom: The McDonaldization of education. *Australian Journal of Teacher Education*, 33(4), 29-54.
- Evans, K. (1995). *Barriers to participation of women in technological education and the role of distance education*. Retrieved from http://www.col.org/PublicationDocuments/pub_Barriers_Participation_Women_Technological.pdf
- Fergus, H., Bernard, L., & Soares, J. (2007). *Breaking down the walls: An evolution of the Extra-Mural Department, The University of the West Indies, 1947-2000*. Mona, Jamaica: University of the West Indies School of Continuing Studies.
- Gardner, H. (2008). *5 minds for the future*. Boston, MA: Harvard Business Press.
- Geith, C., & Vignare, K. (2008). Access to education with online learning and open educational resources: Can they close the gap? *Journal of Asynchronous Learning Networks*, 12(1), 1-22.
- Gift, S., Leo-Rhynie, E., & Moniquette, J. (2006). Quality assurance of transnational education in the English-speaking Caribbean. *Quality in Higher Education*, 12, 125-133. doi:10.1080/13538320600916692
- Gulati, S. (2008). Technology-enhanced learning in developing nations: A review. *International Review of Research in Open and Distance Learning*, 9(1), 1-16.
- Gurstein, M. (2003). Perspectives on urban and rural community informatics: Theory and performance, community informatics and strategies for flexible networking. In S. Marshall, W. Taylor, & X. Yu (Eds.), *Closing the divide: Transforming regional economies and communities with information technology* (pp. 1-11). Westport, CT: Greenwood.
- Hall, G. E., & Hord, S. M. (2006). *Implementing change: Patterns, principles and potholes*. Boston, MA: Allyn & Bacon.
- Hall, W. M. (1996). Quality teacher education via distance mode: A Caribbean experience. *Journal of Education for Teaching: International Research and Pedagogy*, 22, 85-94. doi:10.1080/02607479650038445
- Harasim, L. (2000). Shift happens: Online education as a new paradigm in learning. *The Internet and Higher Education*, 3, 41-61.
- Harvard Graduate School of Education. (n.d.). *EcoMUVE: Advancing ecosystems science education via situated collaborative learning in multi-user virtual environments*. Retrieved from <http://ecomuve.gse.harvard.edu/index.html>
- Hiltz, S. R., & Turoff, M. (2005). Education goes digital: The evolution of on-line learning and the revolution in higher education. *Communications of the OCM*, 48(10), 59-64.
- Howe, G. D. (2003). *Contending with destiny: Reviewing tertiary education in the English-Speaking Caribbean*. Caracas, Venezuela. Retrieved from <http://unesdoc.unesco.org/images/0013/001315/131593e.pdf>
- Kelly, K. (1994). *Out of control: The new biology of machines, social systems and the economic world*. Retrieved from <http://kk.org/books/ooc-mf.pdf>
- Kowlessar, G. (2013). Three major blackouts in three years: Gas woes disrupt T & TEC supply Black Friday. *Trinidad & Tobago Guardian*. Retrieved from <http://guardian.co.tt/news/2013-03-29/three-major-blackouts-three-years>
- Kuboni, O., & Martin, A. (2004). An assessment of support strategies used to facilitate distance students' participation in a web-based learning environment in the University of the West Indies. *Distance Education*, 25, 7-29. doi:10.1080/01587910-42000212431

- Larreamendy-Joerns, J., & Leinhardt, G. (2006). Going the distance with online education. *Review of Educational Research*, 76, 567-609.
- Larsen, K., Martin, J. P., & Morris, R. (2002). Trade in educational services: Trends and emerging issues. *The World Economy*, 25, 849-868. doi:10.1111/1467-9701.00466
- Leo-Rhynie, E., & Hamilton, M. (2007, June 19-21). *Creating a culture of quality: The role of the University of the West Indies in Caribbean education*. Paper presented at the Conference on the Caribbean, Washington, DC. Retrieved from <http://sitere-sources.worldbank.org/INTOECS/Resources/HamiltonPaper.pdf>
- Levy, Y. (2007). Comparing dropouts and persistence in e-learning courses. *Computers & Education*, 48, 185-204. doi:10.1016/j.compedu.2004.12.004
- Louisy, P. (2001). Globalisation and comparative education: A Caribbean perspective. *Comparative Education*, 37, 425-438. doi:10.1080/03050060120091238
- Louisy, P. (2004). Whose context for what quality? Informing education strategies for the Caribbean. *Compare*, 34, 285-292. doi:10.1808/0305792042000257121
- Marrett, C. (2006). *The Caribbean universities project for integrated distance education: Collaborating to overcome the difficulties faced by Small Island Developing States*. Retrieved from <http://pcf4.dec.uwi.edu/viewpaper.php?id=450&print=1>
- Miller, E. (2002, March). *Quality assurance in higher education in the Commonwealth Caribbean*. Paper presented at the Higher Education and Science and Technology in Latin America and the Caribbean: Responding to Expansion and Diversification, Fortaleza, Brazil.
- Miller, E. (2007). *Keynote address*. Paper presented at the Research and higher education policies for transforming societies: Perspectives from Latin America and the Caribbean, Port-of-Spain, Trinidad. Retrieved from <http://www.ckl.n.org/home/sites/default/files/ErrolMiller%20Reserach%20&%20Higher%20Education%20Policies%20for%20Transforming%20Societies-2007.pdf>
- Morgan, P. (2000, July 27-28). *Strengthening the stakes: Combining distance and face-to-face teaching strategies—Preliminary discussion issues*. Paper presented at the Distance Education in Small States, Ocho Rios, Jamaica. Retrieved from http://www.col.org/SiteCollectionDocuments/2_conf_proc_Morgan.pdf
- Murray, T. (1999). Authoring intelligent tutoring systems: An analysis of the state of the art. *International Journal of Artificial Intelligence in Education*, 10, 98-129.
- Osguthorpe, R. T., & Graham, C. R. (2003). Blended learning environments: Definitions and directions. *The Quarterly Review of Distance Education*, 4(3), 227-233.
- Peters, B. F. (1993). The emergence of community, state, and national colleges in the OECS member countries: An institutional analysis. ISER (EC) Monograph Series No. 2.
- Rainie, L., & Wellman, B. (Eds.). (2012). *Networked: The new social operating system*. Cambridge, MA: The MIT Press.
- Resnick, L. B., & Williams-Hall, M. (1998). Learning organizations for sustainable education reform. *Daedalus: Journal of the American Academy of Arts and Sciences*, 127(4), 89-118.
- Ritzer, G. (1996). *The McDonaldization of society*. Pine Forge Press. Retrieved from <http://petermarina.com/DOCUMENTS/problemsurbancomm/mail/The%20McDonaldization%20of%20Society.pdf>
- Roberts, V. (2003). *Accreditation and evaluation systems in the English-Speaking Caribbean: Current trends and prospects*. Caracas, Venezuela: International Institute for Higher Education in Latin America and the Caribbean, IESALC-UNESCO.
- Rosenberg, J. (2000). *The follies of globalisation theory*. London, England: Verso.
- Smith, W. (2011, July 7-9). *The paradigm shift in higher education: A call for action*. Paper presented at the Paradigm Shift in Higher Education: A Call for Action, Cave Hill, Barbados.
- Stemagination. (2013). Retrieved from <http://stemagination.weebly.com/index.html>
- Su, B., Bonk, C. J., Magjuka, R. J., Liu, X., & Lee, S.-h (2005). The importance of interaction in Web-Based Education: A program-level case study of online MBA courses. *Journal of Interactive Online Learning*, 4, 1-19.
- Tewarie, B. (n.d.). *Concept paper for the development of a CARICOM strategic plan for tertiary education services in the CARICOM Single Market and Economy (CSME)*. Retrieved from http://www.caricom.org/jsp/single_market/services_regime/concept_paper_tertiary_education.pdf
- Thomas, D., & Seely Brown, J. (Eds.). (2011). *A new culture of learning: Cultivating the imagination for a world of constant change*. Lexington, KY: CreateSpace.
- Thomas, M., & Soares, J. (2009). Increasing public access to university qualifications: Evolution of the University of the West Indies in the Open Campus. *International Review of Research in Open and Distance Learning*, 10(1), 1-30.
- Thurab-Nkhosi, D. (2007). Bridging the gap between policy and implementation: Moving from single to dual mode at the University of West Indies. *Malaysia Journal of Distance Education*, 9(2), 21-41.
- Thurab-Nkhosi, D. (2010). *Towards the development of a quality assurance framework for the UWI Open Campus* (EdD). University of Sheffield, UK.
- Tomasevski, K. (2001). *Right to education primers No. 3*. Available from <http://www.right-to-education.org/>
- United Nations Department of Economic and Social Affairs Population Division. (2011). *World population prospects: The 2010 revision* (CD-ROM ed.). New York, NY: United Nations.
- United Nations Educational, Scientific and Cultural Organization. (1997, July). *EFA Caribbean plan of action 2000-2015*. Paper presented at the CARICOM Heads of Government Meeting, Montego Bay, Jamaica.
- United Nations Educational, Scientific and Cultural Organization. (1998). *World declaration on higher education for the twenty-first century: Vision and action and framework for priority action for change and development in higher education*. Paper presented at the World Conference on Higher Education Higher Education in the Twenty-First Century, Vision and Action. Retrieved from <http://unesdoc.unesco.org/images/0014/001419/141952e.pdf>
- United Nations Educational, Scientific and Cultural Organization. (2009, July 5-8). *The new dynamics of higher education and research for societal change and development*. Paper presented at the New Dynamics of Higher Education and Research for Societal Change and Development, Paris, France.
- United Nations General Assembly. (1948). *The universal declaration of human rights*. Paris, France: Retrieved from <http://www.un.org/en/documents/udhr/index.shtml#a26>
- U.S. Department of Education, Office of Planning, Evaluation, and Policy Development. (2009). *Evaluation of evidence-based*

- practices in online learning: A meta-analysis and review of online learning studies.* Washington, DC: U.S. Department of Education. Office of Planning, Evaluation, and Policy Development, Policy and Program Studies Service.
- The University of the West Indies. (2012). *The University of the West Indies Strategic Plan 2012-2017* (The University Office of Planning and Development, Trans.). Retrieved from https://sta.uwi.edu/principal/documents/uwi_strategic_plan.pdf
- The University of the West Indies. (n.d.). Welcome to the UWI. Retrieved from <http://www.uwi.edu/index.asp>
- Vision 2030 Jamaica National Development Plan: Education Draft Sector Plan Final Draft. (2009-2030). Retrieved from http://www.vision2030.gov.jm/Portals/0/Sector_Plan/Microsoft%20Word%20-%20Education.pdf
- Wilson, A. (2012, November 15). Will govt close half the GATE? *Trinidad & Tobago Guardian*. Retrieved from <http://guardian.co.tt/business-guardian/2012-11-14/will-govt-close-half-gate>
- Woodall, L. C. (2011). *Transitioning to online education in the Caribbean: The Open Campus, University of the West Indies*. Retrieved from http://www.google.tt/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=3&sqi=2&ved=0CDIQFjAC&url=http%3A%2F%2Fwww.col.org%2Fpcf6%2Ffp%2FzCA4434.doc&ei=p1AaUa3MIpG08ATVn4HACw&usg=AFQjCNGLGqb63FV6UxWBZr_6Bi1APGSrEA
- The World Bank. (2013). *edstats: The State of Education*. Retrieved from <http://web.worldbank.org/WBSITE/EXTER-NAL/TOPICS/EXTEDUCATION/EXTDATASTATISTICS/EXTEDSTATS/0,,contentMDK:21528857~menuPK:4324013~pagePK:64168445~piPK:64168309~theSitePK:3232764,00.html>
- Yogi Bhajan & Gurucharan Singh Khalsa. (n.d.). *Consciousness in the Aquarian age* (Excerpted from *The Quantum Technology of the Shabd Guru*). Retrieved from <http://www.kundalini-yoga-info.com/Consciousness-inthe-Aquarian-age.html>

Author Biography

Laila N. Boisselle is a science-educator who has been teaching online since 2008 and whose interest regarding online-learning stems from her research with complex adaptive systems. She has taught in the twin-island independent, republic state of Trinidad and Tobago for the last 19 years, predominantly so on the larger island of Trinidad. She has spent the last six years in tertiary education at The University of the West Indies, St. Augustine, Trinidad, and the previous 13 years at the secondary level, (11-18 year olds), where she taught Chemistry and Integrated Science. She is also currently a doctoral student at The University of Sheffield.