ANALYZING UNCERTAINTY AND CHANGE IN THE ADVANCEMENT OFGLOBAL HIGHER EDUCATION

Pamela A. Lemoine
Troy University
Robert E. Waller
Columbus State University
Christopher J. Garretson
Columbus State University
Michael D. Richardson*
Global Tertiary Institute
131 Double Tree Lane
Livingston, TN 38570
706-325-0612

ABSTRACT

There are important debates concerning the challenging and uncertain future of global higher education. The primary trend is obvious: those countries with the most vibrant higher education systems are those that are most likely to be educationally and economically productive. But both the social and economic future of countries depends principally on the educational attainment of their population and the quality of their higher education institutions. Global higher education institutions are being asked to emphasize objective measures of performance without consideration for the social values of a degree. In addition, financing for global institutions is diminishing and demands for productivity and quality assurance are increasingly formidable.

Keywords: Technology, global higher education, economics, teaching, learning, COVID-19

1. INTRODUCTION

In this knowledge-intensive society the demand for advanced education has become more prevalent, both for individuals and for society (Altbach& Reisberg, 2018). The global higher education enterprise is changing in profound ways to serve this shifting world, just as higher education has changed in the past (Mense, Lemoine, Garretson, & Richardson, 2018). This is a period of significant transformation in global higher education as universities attempt to respond to the challenges, opportunities, and responsibilities present in this global knowledge economy (Richardson, Jenkins, & Lemoine, 2017; Wihlborg & Robson, 2018). These changes are driven by societal, economic and market forces which are almost impossible to predict (Lemoine, Jenkins, & Richardson, 2017). Therefore, the most critical challenge facing global higher education leaders is how to develop the capacity for change; and if change is inevitable, the capacity for change is perilous (Conceição, 2016).In addition, the global knowledge economy requires innovation to confront the challenges of change and adaptation, which is resiliency (Doyle & Brady, 2018). The current COVID-19 pandemic makes the future of global higher

education even more murky as institutions respond to an unseen force that demands immediate attention and action (Crawford, Butler-Henderson, Rudolph, &Glowatz, 2020; Sahu, 2020).

Global higher education leaders face the most unstable environment in the history of higher education due to decreased financial resources coupled with increased accountability and quality assurancein the face of this pandemic (Davis, 2017; Karalis, 2020). As revenues become scarcer, calls for accountability and quality assurance continually increase as theyare competing forces driving change in global higher educationfunding and quality (Seyfried, Ansmann, &Pohlenz, 2019). In addition, global higher education institutions in the twenty-first century are forced to manage enormous complexity both internally and externally (Gao, 2019). Three domains of complexity are prevalent: (1) global higher education institutions are increasingly less autonomous; (2) global higher education organizational environments are increasingly complex and fragmented; and, (3) global higher education organizations are increasingly reliant on technology (Lemoine & Richardson, 2019).

Changing demands from globalization

Globalization, a key driving dynamicfor 21st century global higher education, has profoundly influenced and impacted higher education in almost every country of the world (Lemoine, Hackett, & Richardson, 2016). Economic and cultural globalization coupled with sustainability have ushered in a new era for global higher education driven by accountability and quality assurance with fewer financial resources (Altbach, Reisberg, &Rumbley, 2019). Globally, higher education leaders are being asked to concentrate on objective measures of performance without consideration for the social values of a degree (Antoine & Van Langenhove, 2019). At the same time, social scientists and others are engaged in a lively debate about the positive and negative impacts of globalization. One group argues that the forces of worldwide economic integration inevitably lead to diminishing capacity of governments to control economic and social activity within their borders.The other side articulates the innumerable advantages of global interaction for education and economic development (Knox, Williamson, & Bayne, 2020). The integration of the world economy through low-cost information and communication technologies (ICT) has become one of the most important consequences of globalization (Leiber, 2019).

Changing applications of technology

Technology makes the business of global higher education more complex,complicated and competitive each day (Chan, Hackett, Lemoine, & Richardson, 2016). Modern society has assumed a global focus, driven by technology, where global higher education institutions are mandated to offer the highest quality educationto a widely diverse audience at a reduced cost (Wadhwa, 2016). Throughout the world, college and university administrators are attempting to determine the impact,influence and effectof technology, from acquisition to utilization (Leahy, Holland, & Ward, 2019). Standards for the application of technology in global higher education have been outlined by international organizations and accrediting agencies but not always integrated into policy; therefore, many models and adaptations have been implemented (Rabah, 2017).

Global higher education leaders are striving to adapt and acclimate to the rapid development and application of technology that has created a global phenomenon in society (Miorando, 2019).The integration of technology for instructional use has generated a schizophrenic atmosphere for global higher educational leaders with divergent attitudes espoused by stakeholders, primarily faculty and students (Gerybadze, 2020). However, the infusion of technology continues to be one of the major contributorsof ambiguity for modern global higher education leaders,making it more multifarious and unpredictable each day (Hackett, Lemoine, & Richardson, 2017). Along with increasing global competition, technology is adding complexity, ambiguity and uncertainty to the organizational environment while the increasing global interdependencies and the accelerating pace of change demand more agile, flexible and adaptive global higher education organizations (Goldin & Katz, 2018; Maresova, Hruska, &Kuca, 2020).

Effective implementation, application and utilization of technology will decrease organizational vulnerability by reducing costs and enhancing adaptability (Flavin, 2016). However, global higher education leaders have increasing difficulty predicting how to control and manage technologies that so profoundly influence and perhaps disrupt global higher education (Everhart & Seymour, 2017). Technological changes typically outpace global higher education leaders' ability to both understand and integrate those variations because the change is often sudden and advanced planning is unable to accurately forecast needed change (Brown, & Keep, 2018). When examining technology within global higher education, four background forces are evident: (1)globalization, (2) massification, (3) marketization, and (4) digitalization (Waller, Lemoine, Mense, & Richardson, 2019). These factors contribute to the fluid and uncertain environment that surrounds much of global higher education.

Global higher education leaders are confronted with a volatileenvironment because the increased development and application of technology have become a societalexperience globally, particularly in response to COVID-19 (Dennis, 2018). Technology is becoming all pervasive and is having a major impact on global higher education and the changesare rapidly becoming ubiquitous (Anduhar, 2019).

The integration of technology for instructional uses has created a frenziedatmosphere for global higher educational leaders that has created controversy between faculty, consumers, students and administrators (Gadge, 2020).Changing technology economics, the merging of formerly disparate technologies with different managerial traditions, and the problems of managing each of the phases of technology assimilation in different ways, call for a reappraisal of organizational structures that were designed for the past (Carayannis, 2018).

Changing economics of global higher education

Government is ultimately responsible for the development of higher education in every nation, but not all governments respond equally. To compete in today's competitive economic environment, global higher education institutions need to become adaptive and agile businesses, capable of responding quickly to changing customer and society demands (Elbasir& Siddiqui, 2018). Continuously changing environments require higher education institutions to constantly reassess their goals, management strategies and projected outcomes (Barrett, 2017). The success of global higher education institutions will come from their ability to manage networks of knowledge and to collect, document and analyze data involving complex systems that are a

byproduct of the global marketplace (Garretson, Lemoine, Waller, & Richardson, 2020). Thus, the focus needs to be on flexibility, learning and development of new knowledge determined by adaptability and agility instead of specific solutions designed and used in the past (Mardiana, 2019).

Globally, nations are required to meet more mandates with fewer resources coupled with increasing costs whilemost global higher education institutions are experiencing the effects of decreased funding with increasing demands for services (Hsueh, 2018). Politicians want to know where the taxpayer money is going and how it is being used. As resources become increasingly fewer, calls for accountability and quality assurance persistently increase, which is aggravated by the escalating costs of higher education tied to the need to be marketable (Li, 2017). Global higher education is driven by the knowledge- and people-intensive nature of the business as well as by the difficulty educational institutions have in containing costs and increasing productivity (Lemoine, Hackett, & Richardson, 2017).

Changing learning in global higher education

Technology is the only tool available to help both global higher educational leaders and faculty to manage the sheer volume of information necessary for success in today's learning environment (Sarantinos, 2019). Educators have historically been dispensers of information; however, in today's educational framework the exact opposite is true--educators should be facilitators of learning and knowledge (Ossiannilsson, 2018). The need for changing traditional approaches to education from reactionary approaches and the acquisition of short-term skills to proactive programs that necessitate life-long learning attitudes are of paramount importance as universities prepare students for the 21st century (Gaulee, Sharma, &Bista, 2020). Global higher education has the ability toprovide students with the knowledge, competencies and skills necessary to function in society and the knowledge society (Jones, 2019).

During this decade, technical innovations are altering the skills, competencies and knowledge needed to succeed in the global workplace and society. Preparing technically educated and skilled individuals is of great economic importance in the world and requires significant attention from educators, employers, policymakers and politicians (Hazelkorn, Coates, & McCormick, 2018). To keep pace with technological development, educators must assume a leadership role in optimizing technology for instructionaluses that are congruent with societies' and students' needs (Bourn, 2018). Additionally, to be totally competitive, educators must cooperate with both business and government to cope with global challenges in the application and utilization of technology for knowledge creation because the knowledge economy is driven by technology and communications: a dramatic departure from the materials-driven economy of the past twenty-five years (Bileviciute, Draksas, Nevera, &Vainiute, 2019).

Online learning enhances the cognitive and psychomotor skills of students by improving students' understanding of concepts, their problem solving and calculating skills, and computer operational skills as well (Parsons & Shelton, 2019). The web-based network has provided effortless and straightforward access to educational resources for learners anywhere and at any time (Coates, Kelly,& Naylor, 2017). For most global universities online learning is considered

as a disruptive technology that is making universities reconsider their models of traditionally delivered education, particularly in response to COVID-19. Online course offerings are growing exponentially in higher education (Waller, Garretson, Lemoine, & Richardson, 2020) and are the fastest growing segment of global higher education. However, with this rapid growth comes problems, namely reduced student outcomes: fewer students completing online courses, fewer students persisting in college after taking online offerings, and lower grades (Waller, Lemoine, & Richardson, 2020).

Changing instruction in global higher education

Innovation and change in university instruction require adaptive technology in response to the demands of a knowledge economy where students are engaged in rapid technology adaptation in a constantly changing world (Bielenia-Grajewska, 2019). In contrast, instruction has historically been contained on campus, using face-to-face instruction. But, as the start of the third decade of the twenty-first century unfolds, significant changes are being undertaken in universities to accommodate the needs of more students (massification), different students, and challenged students (Castaneda & Selwyn, 2018).

University instruction has failed to keep up with the latest in technological and pedagogical innovations during the past twenty years (Alqurashi, 2019). As a result of implementing ICT, many global universities have joined the innovative e-Learning world which has led to the need for pedagogical and technical knowledge to teach using the Internet, and this knowledge should become a core competence for many faculty as well as students (Kumar& Sridhar, 2020; Mense, Garretson, Lemoine, & Richardson, 2018).Learning technology has forced most of the higher education community to examine, if not implement, technological applications for instruction and delivery, i.e., online learning, often categorized as elearning (Crittenden, Biel, & Lovely III, 2019). However, global higher education has been slow to adapt, although some universities extensively use e-learning, distance learning, online education, mlearning, or some other form of technology-driven instructionpropelled by their adaption to meet student needs (Bansal & Kumar, 2018).

New organizational structures and systems to promote quality learning are needed to assist in moving from face-to-face to online instruction and promote learning for today's students (Daniela, Strods, &Kalnina, 2019). Managing the move of university instruction to an online environment is difficult for faculty and students, many of whom were forced to change in response to COVID-19 (Crompton & Traxler, 2019). However, the university instructional system must meet new standards of quality coupled with apprehensions for access demanded by an increasingly technological and diverse society (Naidoo, 2020). Global higher education is discovering that the old instructional ways do not work, and that innovation in instruction is essential, but not without challenges (Brabazon, 2017). Further, elearning exuberates the need for quality professors to attract and support the next generation of students. Many researchers have concluded that the increasing use of contingent faculty is being articulated as a dominant method for restructuring instruction and serving students at a reduced cost (Hayes, 2019; Huber, 2019).

Today's students have grown up with technology in their everyday lives--computers, cell phones, online games, and social media and they expect technology in their educational experiences (Cubeles&Riu, 2018). These technology savvy students often combine full-time employment with part-time study: the so-called earner-learner students (Camilleri & Camilleri, 2017). Financial considerations demand quality instruction for students who will be employable in increasingly competitive markets (Englund, Olofsson, & Price, 2017).

Changing culture and politics in global higher education

With the advent of the 21st Century, the nature of work in global higher education transformed as the process of change sprinted ahead. Predicted by Toffler (1970) midway through the 20th Century, the ubiquity and rapid transformation of technology have disrupted organizations in areas as disparate as entertainment, newspapers and other news media, publishing, marketing, sales and distribution, politics, and education (Khatun, 2019).

The connection of the entire world by internet and the speed with which products can be moved (both intellectual property and actual tangible goods) have rendered practices obsolete and many existing organizations irrelevant, leaving global higher education leaders in a state of uncertainty even as they work to implement existing plans, protocols, policies, and procedures while planning for a future that seems impossible to project (Gulden, Saltanat, Raigul, Dauren, &Assel, 2020). The rapid nature of transformation is exacerbated for institutions of higher education that have remained largely unchanged in organization and delivery over the last century.

Among the variables influencing global higher education have been those created by a vast economic reset following a global recession in the first decade of the 21st Century. The recession was followed by new philosophies on the part of legislatures in the United States and other countries where cuts to funding for higher education became common (McKelvey, Buenstorf, &Brostrom, 2018). At the same time, national movements concerned with accountability measures for institutions of global higher education created pressure for those institutions to defend less than ideal graduation rates and employment rates for their graduates. Globally, legislators demanded accountability related to retention and graduation rates (Richardson, Garretson, Waller, & Lemoine, 2019).

As those political discussions played out around the world,parents and students, burdened by the increasing costs of higher education, began to question the value of that education in terms of return on investment, even as the expectations for services and quality of services provided by those institutions continued on an upward trajectory (Patel, 2019). For some private institutions, this began to result in loss of enrollment or at least flat enrollment at a time when costs for institutions continued to rise, creating new pressures on those institutions in financial terms (Thambusamy, Singh, &Ramly, 2019). Those pressures also affected state-funded institutionsas well, forcing them to compete for tuition dollars with each other, private institutions and for-profit institutions (Pucciarelli& Kaplan, 2016).

Knowledge, once a commodity held by institutions of higher education, now became a commodity that was available on the internet. Institutions were required to redefine themselves during a time when their constituents and stakeholders were already questioning the value of their product and during a time when the product itself, knowledge, was available at the click of a computer or the tap of a smartphone (Robson & Wihlborg, 2019).

Concluding thoughts on change

Global universities today face what may be their greatest challenge as they face globalization, expansion, massification and economic uncertainty, overlaid by emerging technologies that enable the technologically savvy student body to interact in new ways with content, with faculty and the university and with each other (Potter &Devecchi, 2020). This confluence of factors requires the academy to rethink and restructure, both what and how they teach and research, and how they intersect with society (Waller, Lemoine, Mense, & Richardson, 2020).Global higher education institutions have to react to global trends that are difficult to define, articulate and understand, all at the same time,which often creates conflicting goalsas demonstrated by responses to COVID-19 (Hasham, 2018; Stein, 2017).

Global higher education operates in a continually unpredictable, fluid and uncertain environment driven by the knowledge economy and the proliferation of technology (Laptev &Efimov, 2016). Amidst this fluidity it seems clear that being digital is indeed a lifestyle and that most members of the academic community engage the knowledge economy, whether personally or professionally (Souto-Otero, 2019). It is also clear that computers and networks will continue to become cheaper, better, and faster. Technological innovations have important strategic implications for global higher education and greatly influence society as well. Yet, not all technological change is strategically beneficial (Stensaker, Lee, Rhoades, Ghosh, Castiello-Gutiérrez, Vance, Çalıkoğlu, Kramer, Liu,Marei, & O'Toole, 2019).

Change is difficult and often produces results that are not intended or anticipated. Structuralcapability to meet these demands for transformation must be examined in light of organizational capacity (Korsakova, 2019). Consequently, global higher education leaders should understand the challenges associated with change, know their organizational capacity and be able to clearly articulate the role change plays in their organization (Wheaton, 2020). Technology and globalization are here to stay, but they must be understood in relation to contextual reality of universities and colleges and not just in the abstract thinking of theorists and politicians (Ansell, 2017).

Throughout the world concerns about the capability of existing higher education systems to meet the growing challenges of global competition are more pronounced than ever (Lausa, 2019; Stensaker, 2018). Many calls for academic reform in global higher education are motivated by a perceived lack of competitiveness and innovation in this global knowledge economy (Tidd, 2020). A fundamental observation could be that many persons expect global higher education to solve all problems (Austin & Jones, 2018).

Transformation should not be an end for global higher education; it should be the means to achieve the end. This requires educators to use technology as a learning tool, to assist the learner with the task of learning (Valavanidis, 2020).To be successful technology must transform the way students learn and the way educators teach in the coming years (Alqurashji, 2019; Dave, 2019; Jääskelä, Häkkinen, &Rasku-Puttonen, 2017; Lemoine, Sheeks, Waller, & Richardson, 2019; Marshall, 2018; Saubern, Urbach, Koehler, & Phillips, 2020).

Finally, the COVID-19 global pandemic implies massive change for global higher education, from intensive competition for students to the real possibility that some institutions may not be able to host students on campus (Bozkurt & Sharma, 2020).The global migration of students from country to country will also be impacted as some students may not be permitted to travel (Hall, 2020). Also, if institutions are only online, numerous students are not happy with that model and may choose other options. Regardless, the pandemic makes the future unpredictable and unknown in the current environment (Sulkowski, 2020).

2. CONCLUSIONS:

(1)   Learning is a primary consideration for participation in the global economy, making global higher education more essential than ever.
(2)   Technology has changed and will continue to change teaching and learning in global higher education.
(3)   The economics of global higher education are changing due to reduced funding from government.
(4)   Teaching and learning in global higher education are driven by technology.
(5)   Global higher education operates in a continually fluid and uncertain environment.
(6)   The future of global higher education is uncertainty and change in a process of transformation.
(7)   The COVID-19 pandemic has forced global higher education to operate in a state of extreme uncertainty with massive change possible.

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