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EXPLORING THE RELATIONSHIPS BETWEEN TECHNOLOGY AND LEARNING IN GLOBAL HIGHER EDUCATION

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ABSTRACT
Enhancing quality student learning is an essential mandate for global higher education institutions and global higher education leaders are subjected to immense pressures to improve the education of students. Global higher education has been characterized as a process-centered institution, concerned with "how to educate" rather than assessing what students learn. Productivity mandates accept that systematic performance assessment of clearly identified standards will lead to improved performance. For global higher education, assessment and evaluation are prerequisites for addressing quality measures to improve student learning, retention and graduation. Global higher education institutions should examine learning through the applications of technology particularly as they impact student performance.

Key Words: Globalization, Global higher education; Technology, Learning.

1. INTRODUCTION

1.1 Global Higher Education

Enhancing quality student learning is an essential mandate for global higher education and global higher education leaders are subjected to immense pressures to improve the education of students (Liu, Tan, & Meng, 2015). New productivity mandates assume that systematic assessment of performance on the basis of clearly identified standards will lead to improvement of teaching and learning (Antoine & Van Langenhove, 2019).

There is a tremendous push from globalization forces for organizational change to increase student learning in order for the institutions to be accountable for the use of tax dollars and other revenues to impact learning (Bileviciute, Draksas, Nevera, & Vainiute, 2019). Technology has provided the impetus to deliver new learning strategies, e.g., e-learning, and to assess and evaluate student learning which has direct applications on quality assurance, the new accountability of the 21st century (Conceicao, 2016). However, technology is only a tool, and not the only answer, to be used by the institution and faculty to deliver and ensure continuous learning from widely diverse student populations. To compete in today's economic environment,

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global higher education institutions need to become adaptive businesses, capable of responding quickly to changing customer demands (Baer, 2017).

Global higher education faces its greatest combinations of challenges: economic uncertainty, accountability, and globalization overlaid by emerging technologies. University leaders face the twin trials of dramatic decreases in public financial support and the increasing cost of resources to avoid technological obsolescence (Altbach & Reisberg, 2018). The world is shifting into an information revolution making the industrial revolution obsolete and the knowledge economy the working paradigm. Global higher education is experiencing a social and economic change that is evolving from an industrial focus at a national level, to an information focus at a global level (Waller, Lemoine, Mense, Garretson, & Richardson, 2019).

Global higher education has profoundly increased the prominence of data-driven decision-making (Brown & Keep, 2018) and has impacted education in four diverse dimensions: (1) Democratization; everyone should have the opportunity for education; (2) Bureaucratization; increased centralization; (3) Privatization; of mission and purpose; and (4) Financial; many institutions see globalization as an opportunity to make money (Waller, Lemoine, Mense, & Richardson, 2019; Wihlborg & Robson, 2018; Xiao, 2018). Society anticipates that global higher education will be able to use data to prove its worth while facing reduced faith in the outcomes (Gharai, Panigrahi, Das, & Satpathy, 2018), Global higher education institutions expect the data gathered will prove their worth (Wadhwa, 2016).

1.2 Infusion Of Technology Into Learning

The 21st century global university revolves around technology – from student information to graduation data. Technology allows global higher education leaders and faculty to be provided with mounds of data, which needto be synthesized into useful information (Dennis, 2018). With the adoption of computer technology, accountability-based assessments, federal mandates and global calls for quality assurance, global universities have been transformed into “data-based” institutions (Hora, Bouwma-Gearhart, & Park, 2017). Globalization and the mushrooming of digital technologies accelerated tremendously during the last decade meaning that current technology clearly provides the means for acquiring greater amounts of data and information with more efficiency than ever before (Rabah, 2017).

In recent years, nothing has affected global higher education as profoundly as the advent and implementation of technology, including the depth, diversity, and value of technology generated data and information (Owusu-Ansh, 2018). The combined forces of technology and data analysis have created a landscape of tremendous complexity with strategic directions difficult to predict (Goldin & Katz, 2018). The fact that these forces interact on a global scale creates non-linear change with the appearance of chaos owing to the many degrees of interdependence and interaction (Mense, Lemoine Garretson, & Richardson, 2018).

Leaders and faculty have access to student information portfolios with behavior reports, quiz and grade data, class and course assessment performance combined in overall aggregate and current data (Jarke & Breiter, 2019). According to many researchers, the current influx of data is

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primarily due to the continued development of computer technology, technological applications and the Internet. Consequently, many faculty are often overwhelmed with the magnitude of the data and how to disaggregate the data to improve student performance (Regan & Jesse, 2019).

Researchers suggest that technology may offer users more communications than they can respond to in an effective and efficient manner (Flavin, 2016; Kasemsap, 2016). Data may be presented in such a manner that users are unable to decipher the relevance of given data gathered into discrete collections that mean one thing to one user and be of no use to another. Global educators must draw a distinction between terms such as 'data', 'information', and knowledge', Data are the individual pieces of information that can stand alone (e.g., words). Although each data piece is meaningful, they do not communicate any particular message on their own as disjointed or fragmented units (Thambusamy, Singh, & Ramly, 2017). 'Information' is a collection of data that communicates a message or tells a story. 'Information' is 'data' with context and meaning derived from the data. 'Knowledge' is derived from a collection of 'data' and 'information' items (Lemoine, Hackett, & Richardson, 2017). Applying it to information, which is derived from data, and determining how best to apply it to the situation is the key, yet faculty may not have the necessary background to understand how to use the data. An educator's understanding of 'data' and 'information' using one's experiences and familiarity of data and information adds to one's knowledge base potentially allowing for growth and better use of data to aid student success (Pucciarelli & Kaplan, 2016).

1.3 Learning with Technology

Educators have historically been dispensers of information. However, in today's global educational framework the exact opposite is true- educators should be facilitators of knowledge (Biddix, Chung & Park, 2015) 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 global universities prepare students for the 21st century with the knowledge and skills necessary to function in the global society (Crompton & Burke, 2018).
The global economy is driven by technology and communications: a dramatic departure from the materials driven economy of the past fifty years. In the 21st century, technical innovations are altering the skills and knowledge needed to succeed in the global workplace and society (Dave, 2019). Preparing technically educated and skilled individuals is of great economic importance in the world and requires significant attention from educators, employers, and politicians. In today's evolving global educational marketplace students are accustomed to instant access, any time, any place. Ubiquitous anytime, anywhere learning is attractive to diverse learners (Lemoine & Richardson, 2019).

The global society needs educators who can think, not merely react in a patterned way because the education of students cannot be a stimulus-response profession. The world is far too complex for education to be left behind in this technological revolution. The implication is clear in this new millennium: educators must critically examine how students are taught and how they learn (Collins & Halverson, 2018). Educators must, themselves, possess an appreciation for critical analysis and serve as a facilitator to students as they find and interpret information for

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themselves (Caspersen, Frolich, & Muller, 2017) There are some critics of learning with technology who assert that technology learning is not about people but machine; that what has developed is "push-button learning." Rather, most global higher education faculty perceive that the concept of knowledge transfer is outdated and needs to change so that students can be active participants in the learning and assist them to think, to solve, to use, to analyze, to evaluate, to create, to process, to explore (Englund, Olofsson, & Price, 2017).

1.4. The New Learning Attributes

- Learning "how" takes precedence over learning "what".
- Learning emphasizes searching and creating.
- More learning takes place outside the classroom.
- Learning emphasizing purpose and personalization.
- Learning has become the responsibility of "managers of learning" rather than "transmitters of knowledge."
- Learning is for everyone (Richardson, Garretson, Waller & Lemoine, 2019).

1.5 Integrating Technology And Learning

The 21st-Century Skills movement is more than a decade old. 21st-century skills, such as **c**ritical thinking, **c**ollaboration, **c**ommunication and **c**reativity, problem-solving, digital literacy, and citizenship have been identified as being critical to preparing students to participate in and contribute to the global society (Choudhury & Pattnaik, 2020). Despite some consensus on the knowledge, skills and dispositions needed in the 21st-century, results from international studies indicate that teaching strategies and assessment of 21st-century skills may not be well implemented in practice (Lemoine, Jenkins, & Richardson, 2017).

The age of technology and the information society are sweeping global higher education towards a future dependent upon knowing how to function in this new world. Higher education in the United States and around the world is reshaped daily with new technologies (Flavin, 2016). Technology has created opportunities for several new approaches to learning, specifically, distance learning, e-learning, m-learning, online and blended learning (Dziuban, Graham, Moskal, Norberg, & Sicilia, 2018). To keep pace with technological development, educators must assume a leadership role in optimizing technology for instructional use (Patel & Patel, 2017). Emerging technologies are disrupting the patterns of teaching and learning that have dominated higher education (Kahn & Agnew, 2017). Two important technology trends are driving these changes: rising public interest in lowering education costs and improving student achievement (Jacob & Gokbel, 2018).

In the 21st century technology and education must work together to secure the future for students and society (Goodman, Melkers, & Pallais, 2019). Society of the 21st century is knowledge-based in which learning is critical and becomes important for survival in the rapidly changing educational environment (Dunn & Kennedy, 2019). Additionally, to be totally competitive, global higher education institutions must cooperate with both business and government to cope

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with global challenges in the application and utilization of technology for learning (Brown & Keep, 2018).

2. CONCLUSIONS

1. Global higher education should be focused on improving learning opportunities for students.
2. Increased student learning gives global higher education institutions the information to prove their worth to society, particularly governments and policymakers.
3. Technology and global higher education must work together to secure the future for students and society.
4. Developing optimum learning engagement demonstrates the ability of higher education institutions to fulfil their mission in a world of technology and learning.

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