

# The Impact Of Turbulence On Global Higher Education During A Pandemic

Christopher J. Garretson

Thomas J. McCormack

Robert E. Waller

Columbus State University

Pamela A. Lemoine

Troy University

Michael D. Richardson

Global Tertiary Institute

**Abstract:** *With COVID-19, global higher education is chaotic, turbulent, and changing while the larger political, social, economic, legal, and cultural context of higher education is unstable. COVID-19 has disrupted the traditional processes in global higher education.*

*The 21st Century world is highly complex, unpredictable and turbulent where the interplay between order and chaos provides the opportunity for leadership. There is also abundant disorder, turbulence, unpredictability, and fragmentation. While higher education around the world is no stranger to the turbulence brought on by major social, political, and economic change, the scale and scope of COVID-19 is unprecedented in an era when global higher education is both extensively available and exceedingly internationalized. The COVID-19 pandemic compelled leaders to make high-stakes decisions under conditions of turbulence, threat, uncertainty, and time pressure to find approaches to protect their product and their people.*

**Keywords:** *Turbulence, Global higher education, COVID-19, Globalization, Leadership*

## I. WHAT IS TURBULENCE?

Turbulence is characterized as “a time in which events, demands, and/or persons interact in highly uncertain, changing, inconsistent, variable, unexpected or unpredictable ways sometimes described as when the “ground is in motion” (Emery & Trist, 1965, p. 26). As a result, turbulence occurs and by the time actionable knowledge is obtained the crisis event may have moved on or changed. Ansell (2017) defined turbulence as “a situation where events, demands and support interact and change in highly variable, inconsistent, unexpected or unpredictable ways” (p. 78). Turbulent events are always highly variable and lack predictability; therefore, turbulence is also experienced as chaos because it displays disorder and confusion (Lemoine, Waller, Garretson, & Richardson, 2020).

“The intensification of speed, complexity and conflict appear to be the common factors that that produce turbulence” (Ansell & Trondal, 2017, p. 2). But as Cameron, Kim and

Whetten (1987) concluded: “How do public organizations . . . respond to turbulence? We discern two broad strategies:” stabilize or adapt (p. 225). A crisis represents “a serious threat to the basic structures or the fundamental values and norms of a system, which under time pressure and highly uncertain circumstances necessitates making vital decisions” (Rosenthal, Charles, & t'Hart, 1989, p 22).

According to Boin and t'Hart (2010), key properties of crisis are threat, urgency, and uncertainty. A crisis occurs where an urgent response is required in an uncertain situation that threatens fundamental values or life-sustaining systems (Zhang, Welch, & Miao, 2018). Therefore, turbulence may produce surprise, volatility, rapid and shifting operational strategies, contradictory demands, and uncertainty (Ansell & Boin, 2019; Drucker, 1993). Turbulence can also be defined “as situations where events, demands, and support interact in highly variable, inconsistent, unexpected and unpredictable ways” (Ansell, Sørensen, & Torfing, 2020, p. 11). What are the most commonly impacted components of global higher education that are impacted by turbulence?

## A. TURBULENCE AND GLOBAL HIGHER EDUCATION

Economic, societal and educational globalization have ushered in a new era creating the opportunity for global higher education to expand while creating turbulence for the institutions and society (Barrett, 2017). Global higher education is swept up in global marketization and the global university market is expanding with increasing speed. Global higher education is essential to the creation, exchange and implementation of knowledge creation and sharing (Jardim, Wegner, & Ladeira, 2020). In this frenzied environment turbulence creates a situation where knowledge and information are more highly prized and more highly globalized than are economic concerns, creating dynamic disequilibrium. However, global higher education is increasingly viewed as a major engine of economic development (Garretson, Lemoine, Waller, & Richardson, 2020). The elaborate interdependence and speed of global society means that the task of managing turbulent events is a far more central task for global higher education and much more is at stake in doing it well (Johnson, Veletsianos, & Seaman, 2020; Stensaker, 2015). The challenge for many institutions today involves maintaining a strong sense of identity while remaining dynamic enough to respond to turbulence as exhibited by the COVID-19 pandemic (Waller, Lemoine, Garretson, & Richardson, 2020).

## B. TURBULENCE AND COVID-19

Today's world is increasingly turbulent in which problems preclude the existence of ready-made solutions (Lemoine & Richardson, 2019). Turbulence during crisis demonstrates the decision-making competences of leaders under threat, urgency, and uncertainty (Gross, 2016). Pandemic policy response involves significant tradeoffs, such as curtailing education activity to save lives (Busby, 2020). However, the unsettled science and conflicting information about COVID-19 meant critical decisions were made before leaders had a clear sense of their options (Graham & Donaldson, 2020). Therefore, leaders frequently relied on emergency declarations to make rapid, extraordinary decisions (El Masri & Sabzalieva, 2020). In a state of severe or extreme turbulence no opportunity for planning was available, since the need for a speedy, well-considered response was crucial (Cobbinah & Agyemang, 2020).

The pandemic was defined by international contagion and the disruption of domestic processes by an unseen threat (Saxena, 2020). COVID response came to be seen broadly in terms of rapid response to protect people, such that COVID-19 is best understood as the politics of crisis where turbulence dominates the environment (Sharma, 2020). Crises often compel leaders to make rapid decisions in lieu of long-term planning as was the case with COVID-19 (Horton, 2020). This temporal complexity often arises from multiple or shifting measures, such as when organizations must shift from routine program action to rapid response (Bigley & Roberts 2001).

Although turbulence creates an impetus for higher education institutions to stabilize their operations, it often simultaneously produces pressure for rapid and unexpected

change and may exhibit high volatility (Lemoine & Richardson, 2020). To avoid mismatches with their environment, global higher education institutions were pressed to quickly adapt to these changing conditions (Lipsy, 2020). Turbulence often produces surprises for institutions that it makes planning difficult. Planning depends on an organization's capacity to anticipate the future. Because turbulence makes it difficult to anticipate the future, planning based on fixed planning parameters will often fare badly in these conditions (Moon, 2020). Turbulence negatively impacts quick decision making, but global higher education leaders responded in almost unheard-of unity in closing campuses and moving to online learning to protect people (students, faculty and staff) and their products (student learning) (Marshall, Roache, & Moody-Marshall, 2020). Resilience is about developing the ability to move the organization post crisis to a new position that is better than its state before the crisis (Izumi, Sukhwani, Surjan, & Shaw, 2020). It means to lead through the crisis with enough agility to absorb adversity and improve responsiveness to arising challenges (Breen, 2017).

## C. TURBULENCE AND GLOBALIZATION

COVID-19 is a global pandemic which implies that most of the world is impacted. Globalization, a key reality in the 21st century, has already profoundly changed higher education (Waller, Lemoine, Mense, & Richardson, 2019). Globalization is viewed as the reality shaped by an increasingly integrated world economy, new information and communications technology, the emergence of an international knowledge network, and other forces beyond the control of individual global higher education institutions which creates dynamic turbulence (Hazelkorn, Coates, & McCormick, 2018). The entire world has been transformed into one complex system by globalization and continuously increased interconnectedness. Globalization with changes in the world's economy, increasing diversity, and the ubiquitous use of technology has created turbulence and uncertainty for global higher education (Lemoine, Jenkins, & Richardson, 2017), now overlaid with the pandemic.

The world is characterized by changing social, economic, and political dynamics and the constant emergence of new, disruptive requirements and challenges, particularly COVID-19 (Karalis, 2020). Nor can global higher education institutions protect themselves against turbulent problems in a global world in which streams of people, information, and commodities cross borders at an increasing pace (Wihlborg & Robson, 2018). Though global higher education institutions often perceive themselves as objects of globalization they are also its agents and create turbulence by their actions (Mense, Lemoine, Garretson, & Richardson, 2018). Yet, the pandemic has created such a turbulent world that global higher education institutions are mostly questioning their existence and future (Carpenter, Strawser, Dvorak, Forde, & Krsmanovic, 2020).

## D. TURBULENCE IN FINANCIAL MARKETS

Governments across the world have steadily minimized their support for public higher education, and costs associated with gaining a degree have increased constantly over the last

decade creating a turbulent environment (Bourn, 2018). Most universities are forced to adopt a restructuring model for commoditizing education to make a profit from large numbers of students, termed massification. In order to hold universities accountable despite limited governmental budgets, many nations have adopted performance-based university funding strategies for targeted programs (Umbricht, Fernandez, & Ortagus, 2017; Zerquera & Ziskin, 2020). To complicate this turbulence, citizens and bureaucrats in many countries are asking more frequently what tangible benefits the society is receiving for the tax revenues being spent on higher education (Blankenberger & Williams, 2020).

Society no longer grants privilege and financial commitment to higher education. Tax dollars are scarce or non-existent due to other demands on society (Li, 2017). Many perceive that those receiving the most from global higher education institutions should pay for the privilege which has caused dramatic increases in tuition and fees creating turbulence between students, their families and institutions (Pitman, 2016). Higher education is perceived to be very costly and the costs have been rising rapidly (Hazelkorn & Gibson, 2019). Higher education is also widely seen as highly beneficial to the country's economy. For many in underserved regions of the world, higher education has come to be seen as necessary for social mobility and economic success which has increased turbulence for many global higher education institutions (DePietro, 2020). In this unstable financial market will global institutions survive the pandemic (Muftahu, 2020)? Several United States institutions have already closed and more around the world are expected to close (Friga, 2020). With massive funding going to COVID-19 relief efforts in most countries, funding for higher education is at risk (Drayton & Waltmann, 2020).

## E. TURBULENCE AND LEADERSHIP

Control-fixated administrative systems must give way to trust-based systems that allow more opportunities for decentralized flexibility, innovation, and adaptation, thereby preparing public organizations to deal with turbulence (Baer & Duin, 2020). Global higher education leaders will have to learn to operate in uncertain and unpredictable circumstances and attempt to solve problems under pressure and without sufficient knowledge about cause and effect (Fernandez & Shaw, 2020). The rhetoric of change also plays a significant role in contemporary leadership where each of three challenges (complexity, unpredictability and turbulence) requires a new kind of organizational leadership (Dirani, Abadi, Alizadeh, Barhate, Garza, Gunasekara, Ibrahim, & Majzun, Z. (2020).

Leaders must accept and start from the premise that the world as it is today is a complex interconnected system (Koehn, 2020; McCormack, Lemoine, & Richardson, 2020). Complex systems, particularly social ones, are characterized by dynamics that are often beyond control, making them unpredictable and highly turbulent (Bogusky-Halper, 2020). When dealing with complexity, unpredictability and turbulence leaders are constantly trying to make sense of the challenges they face and search for alternative solutions they could use (McGuinness, 2020). Decision making in complex

systems as global higher education is today is not linear and may incur unpredictable risks and may result in perverse effects resulting from turbulence (Gross, 2020). Leadership in turbulent times is not for control freaks or those with a strong preference for rational decision-making based on deep analyses and protracted studies (Baer & Duin, 2020). Decision making for global higher education leaders requires quick decision making and should incorporate an agile and adaptive mindset and operational thinking when dealing with turbulence (Gurr & Drysdale, 2020).

## II. IMPLICATIONS OF TURBULENCE

The challenges of globalizations have led to the great expansion of higher education in different parts of the world and change is necessary for global higher education institutions to remain viable during a global pandemic (Lewin, 2020). Global higher education confronts a future filled with challenges, risks and uncertainties. The challenge for many institutions today involves maintaining a strong sense of identity while remaining dynamic enough to respond to outside pressures such as COVID-19 (Smith, (2020). Being aware that global higher education is an increasingly turbulent environment, where uncertainty dominates can make a difference for leaders and their institutions (Evans, 2020). In the knowledge economy, the competency to manage knowledge as a key resource of a global higher education institution implies new opportunities, new challenges, new viewpoints and new learning (d'Orville, 2020). Turbulent times highlight all too quickly the limits of traditional management models for dealing with chaos and crisis particularly as demonstrated by the COVID-19 pandemic (Buheji & Ahmed, 2020).

## III. CONCLUSIONS

- ✓ In global higher education, turbulence, unpredictability and disruptive change are more present than ever.
- ✓ The modern world is highly unpredictable and traditional ways of solving problems are not effective.
- ✓ The COVID-19 pandemic has inadvertently created an opportunity for global higher education leaders to build resilience, tolerance to frustration, and response to turbulence.
- ✓ COVID-19 has made it evident that everything cannot be formalized into predictable, mechanistic patterns that are easy to understand.
- ✓ The COVID-19 pandemic accelerated the turbulence, uncertainty and complexity across global higher education.
- ✓ As a result of the COVID-19 pandemic, global higher education will likely continue to operate in a continually turbulent and uncertain environment.
- ✓ COVID-19 has made it clear that global higher education is susceptible to external dangers driven by turbulence and uncertainty.

- ✓ The COVID-19 pandemic reveals that the public sector is facing turbulent problems characterized by the emergence of inconsistent, unpredictable, and uncertain events.

## REFERENCES

- [1] Ansell, C. (2017). Turbulence, adaptation, and change. In *Governance in turbulent times*. (pp. 77-104). London, UK: Oxford University Press.
- [2] Ansell, C., & Trondal, J. (2018). Governing turbulence: An organizational-institutional agenda. *Perspectives on public management and governance*, 1(1), 43-57.
- [3] Ansell, C., & Boin, A. (2019). Taming deep uncertainty: The potential of pragmatist principles for understanding and improving strategic crisis management. *Administration & Society*, 51(7), 1079-1112.
- [4] Ansell, C., Sørensen, E., & Torfing, J. (2020). The COVID-19 pandemic as a game changer for public administration and leadership? The need for robust governance responses to turbulent problems. *Public Management Review*, 1-12. doi.org/10.1080/14719037.2020.1820272
- [5] Baer, L., & Duin, A. H. (2020). 'Smart change' for turbulent times. *Planning for Higher Education*, 48(3), 53-62.
- [6] Barrett, B. (2017). The dual roles of higher education institutions in the knowledge economy. In *Globalization and change in higher education* (pp. 57-73). Cham, Switzerland: Palgrave Macmillan.
- [7] Bigley, G. A., & Roberts, K. H. (2001). The incident command system: High-reliability organizing for complex and volatile task environments. *Academy of Management Journal*, 44(6), 1281-1299.
- [8] Blankenberger, B., & Williams, A. M. (2020). COVID and the impact on higher education: The essential role of integrity and accountability. *Administrative Theory & Praxis*, 42(31), 404-423
- [9] Bogusky-Halper, K. (2020, April 3). Study: Organizations rising to the challenge of COVID-19 communication, but needs persist; leaders must address concerns and demonstrate transparency, clarity and openness. *Business Wire*. <https://www.businesswire.com/news/home/20200403005278/en/STUDY-Organizations-Rising-Challenge-COVID-19-Communications-Persist>
- [10] Boin, A., & t'Hart, P. (2010). Organising for effective emergency management: Lessons from research. *Australian Journal of Public Administration*, 69(4), 357-371.
- [11] Bourn, D. (2018). Globalisation, education and skills. In *Understanding global skills for 21st Century professions* (pp. 17-35). Cham, Switzerland: Palgrave Macmillan.
- [12] Breen, J. M. (2017). Leadership resilience in a VUCA world. In *Visionary leadership in a turbulent world: Thriving in the new VUCA context* (pp. 39-58). Bingley, UK: Emerald Publishing Limited.
- [13] Buheji, M., & Ahmed, D. (2020) Foresight of Coronavirus (COVID-19) Opportunities for a better world. *American Journal of Economics*, 10(2), 97-108.
- [14] Busby, J. W. (2020). Understanding the anemic global response to COVID-19. *Journal of Health Politics, Policy and Law*. 45(6). 1013-1021.
- [15] Cameron, K. S., Kim, M. U., & Whetten, D. A. (1987). Organizational effects of decline and turbulence. *Administrative Science Quarterly*, 32(2). 222-240.
- [16] Carpenter, R., Strawser, M. G., Dvorak, K., Forde, T., & Krsmanovic, M. (2020). The Implications of COVID-19 on Educators, Students, Curricula, and Faculty Development. *The Journal of Faculty Development*, 34(2), 9-14.
- [17] Cobbinah, J. E., & Agyemang, S. (2020). Quality management and academic leadership. In *Quality management principles and policies in higher education* (pp. 101-120). Hershey, PA: IGI Global.
- [18] DePietro, A. (2020, April 30). Here's a look at the impact of Coronavirus (COVID-19) on colleges and universities in the U.S. *Forbes*. Available from: <https://www.forbes.com/sites/andrewdepietro/2020/04/30/impact-coronavirus-covid-19-colleges-universities/#6d4f9cb061a6>
- [19] d'Orville, H. (2020). COVID-19 causes unprecedented educational disruption: Is there a road towards a new normal? *Prospects*, 49, 11-15
- [20] Dirani, K. M., Abadi, M., Alizadeh, A., Barhate, B., Garza, R. C., Gunasekara, N., Ibrahim, G., & Majzun, Z. (2020). Leadership competencies and the essential role of human resource development in times of crisis: A response to Covid-19 pandemic. *Human Resource Development International*, 23(4), 380-394.
- [21] Drayton, E., & Waltmann, B. (2020). Will universities need a bailout to survive the COVID-19 crisis? London, UK: *The Institute for Fiscal Studies*. <https://doi.org/10.1920/BN.IFS.2020.BN0300>.
- [22] Drucker, P. F. (1993). *Managing in turbulent times*. London, UK: Routledge.
- [23] El Masri, A., & Sabzalieva, E. (2020). Dealing with disruption, rethinking recovery: Policy responses to the COVID-19 pandemic in higher education, *Policy Design and Practice*, 3(3), 312-333
- [24] Emery, F. E., & Trist, E. L. (1965). The causal texture of organizational environments. *Human Relations*, 18(1), 21-32.
- [25] Evans, M. (2020). COVID-19 exposes sector's vulnerability. *Advocate: Journal of the National Tertiary Education Union*, 27(1), 4-5.
- [26] Fernandez, A. A., & Shaw, G. P. (2020). Academic leadership in a time of crisis: The coronavirus and COVID-19. *Journal of Leadership Studies*, 14(1), 39-45.
- [27] Friga, P. N. (2020, April 20). Under Covid-19, university budgets like we've never seen before. *The Chronicle of Higher Education*. Retrieved from: <https://www.chronicle.com/article/Under-Covid-19-University/248574>
- [28] Garretson, C. J., Lemoine, P. A., Waller, R. E., & Richardson, M. D. (2020). Knowledge mobilization and global higher education: Building capacity for change. In *Knowledge management practices in the public sector* (pp. 1-23). Hershey, PA: IGI Global.



- [29] Graham, S. W., & Donaldson, J. F. (2020). Academic leaders' response to the volatility of higher education: The influence of institutional logics. *Studies in Higher Education*, 45(9), 1864-1877.
- [30] Gross, J. (2016). *Using turbulence theory as a metaphor in a volatile world*. Philadelphia, PA: Temple University.
- [31] Gross, S. J. (2020). Applying turbulence theory to educational leadership in challenging times. New York, NY: Routledge.
- [32] Gurr, D., & Drysdale, L. (2020). Leadership for challenging times. *International Studies in Educational Administration*, 48(1), 24-31.
- [33] Hazelkorn, E., & Gibson, A. (2019). Public goods and public policy: What is public good, and who and what decides? *Higher Education*, 78(2), 257-271.
- [34] Hazelkorn, E., Coates, H., & McCormick, A.C., (2018, September 12). No easy way to clarify quality in higher education. *University World News*. Available from: <https://www.universityworldnews.com/post.php?story=20180911150857190>
- [35] Horton, R. (2020). *The COVID-19 catastrophe: What's gone wrong and how to stop it happening again*. Cambridge, UK: Polity Press.
- [36] Izumi, T., Sukhwani, V., Surjan, A., & Shaw, R. (2020). Managing and responding to pandemics in higher educational institutions: Initial learning from COVID-19. *International Journal of Disaster Resilience in the Built Environment*. <https://doi.org/10.1108/IJDRBE-06-2020-0054>
- [37] Jardim, W. C., Wegner, D., & Ladeira, W. J. (2020). The moderating effects of competitiveness and technological turbulence on the interaction between relational competence and knowledge generation. *Knowledge Management Research & Practice*, 1-13. <https://doi.org/10.1080/14778238.2020.1762252>
- [38] Johnson, N., Veletsianos, G., & Seaman, J. (2020). US faculty and administrators' experiences and approaches in the early weeks of the COVID-19 Pandemic. *Online Learning*, 24(2), 6-21.
- [39] Karalis, T. (2020). Planning and evaluation during educational disruption: Lessons learned from Covid-19 pandemic for treatment of emergencies in education. *European Journal of Education Studies*, 7(4), 125-142.
- [40] Koehn, N. (2020, April 3). Real leaders are forged in crisis. *Harvard Business Review*, <https://hbr.org/2020/04/real-leaders-are-forged-in-crisis>
- [41] Lemoine, P. A., Jenkins, W. M., & Richardson, M. D. (2017). Global higher education: Development and implications. *Journal of Education and Development*, 1(1), 58.
- [42] Lemoine, P. A., & Richardson, M. D. (2019). Creative disruption in higher education: Society, technology, and globalization. In *Educational and social dimensions of digital transformation in organizations* (pp. 275-293). Hershey, PA: IGI Global.
- [43] Lemoine, P. A. & Richardson, M. D. (2020). Planning for higher education institutions: Chaos and the COVID-19 pandemic. *Educational Planning* (Centennial Edition), 27(3), 43-57.
- [44] Lemoine, P. A., Waller, R. E., Garretson, C. J., & Richardson, M. D. (2020). Analyzing uncertainty and change in the advancement of global higher education. *International Journal of Education Humanities and Social Sciences*, 3(4), 208-223.
- [45] Lewin, K. M. (2020). Contingent reflections on coronavirus and priorities for educational planning and development. *Prospects*, 49(1), 17-24.
- [46] Li, A. Y. (2017). Dramatic declines in higher education appropriations: State conditions for budget punctuations. *Research in Higher Education*, 58(4), 395-429.
- [47] Lipsky, P. Y. (2020). COVID-19 and the politics of crisis. *International Organization*, 1-30. Available at: <https://doi.org/10.1017/S0020818320000375>
- [48] Marshall, J., Roache, D., & Moody-Marshall, R. (2020). Crisis leadership: A critical examination of educational leadership in higher education in the midst of the covid-19 pandemic. *ISEA*, 48(3), 30-37.
- [49] McCormack, T. J., Lemoine, P. A., & Richardson, M. D. (2020b). Online teaching and learning in global higher education during COVID-19. *International Education and Research Journal*, 6(10), 33-35.
- [50] McGuinness, J. (2020, May 12). 4 COVID-19 leadership lessons. *Chief Executive*. <https://chief executive.net/4-covid-19-leadership-lessons/>
- [51] Mense, E. G., Lemoine, P. A., Garretson, C. J., & Richardson, M. D. (2018). The development of global higher education in a world of transformation. *Journal of Education and Development*, 2(3), 47.
- [52] Moon, M. J. (2020). Fighting against COVID-19 with agility, transparency, and participation: Wicked policy problems and new governance challenges. *Public Administration Review*, 80(4), 651-656.
- [53] Muftahu, M. (2020). Higher education and Covid-19 pandemic: Matters arising and the challenges of sustaining academic programs in developing African universities. *International Journal of Educational Research Review*, 5(4), 417-423.
- [54] Pitman, T. (2016). The evolution of the student as a customer in Australian higher education: A policy perspective. *Australian Educational Researcher*, 43(3), 345- 359.
- [55] Rosenthal, U., Charles, M., & t'Hart, P. (1989). *Coping with crises*. Springfield, IL: Charles C. Thomas.
- [56] Saxena, S. K. (2020). *Coronavirus disease 2019 (COVID-19)*. Singapore: Springer.
- [57] Sharma, Y. (2020, July 18). Disaster preparedness would improve the pandemic response. *University World News*. Available from: <https://www.universityworldnews.com/post.php?story=20200715113545432>
- [58] Smith, P. (2020). Lessons from Yalta: Imperatives for post-COVID 19 higher education. *International Journal of Multidisciplinary Perspectives in Higher Education*, 5(1).113-117
- [59] Stensaker, B. (2015). Organizational identity as a concept for understanding university dynamics. *Higher Education*, 69(1). 103-115
- [60] Umbricht, M. R., Fernandez, F., & Ortagus, J. C. (2017). An examination of the (un)intended consequences of

- performance funding in higher education. *Educational Policy*, 31(5), 643–673.
- [61] Waller, R. E., Lemoine, P. A., Garretson, C. J., & Richardson, M. D. (2020). Global higher education: Complexity and uncertainty. *International Education and Research Journal*, 6(4), 57-58
- [62] Waller, R. E., Lemoine, P. A., Mense, E. G., & Richardson, M. D. (2019). Higher education in search of competitive advantage: Globalization, technology and e-learning. *International Journal of Advanced Research and Publications*, 3(8), 184-190
- [63] Waller, R. E., Garretson, C. J., Lemoine, P. A., & Richardson, M. D. (2020). Examining technology uncertainties in global higher education. *International Journal of Education Humanities and Social Sciences*, 3(3), 24-32
- [64] Waller, R. E., Lemoine, P. A., Garretson, C. J., & Richardson, M. D. (2020). Global higher education: Complexity and uncertainty. *International Education and Research Journal*, 6(4), 57-58
- [74] Wihlborg, M., & Robson, S. (2018). Internationalisation of higher education: Drivers, rationales, priorities, values and impacts. *European Journal of Higher Education*, 8(1), 8-18.
- [75] Zerquera, D., & Ziskin, M. (2020). Implications of performance-based funding on equity-based missions in US higher education. *Higher Education*, 80, 1153–1174
- [76] Zhang, F., Welch, E. W., & Miao, Q. (2018). Public organization adaptation to extreme events: Mediating role of risk perception. *Journal of Public Administration Research and Theory*, 28(3), 371–387.

IJIRAS