

# A Critical Literature Review of World-Class Universities: Characteristics, Enablers, and Strategies

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**Abstract:- Nations are keen to invest in quality education since it is the driver for economic growth and competitiveness. The concept of World-Class University (WCU) is inspired by both internationalization of higher education and differentiation strategy. The paper aims to shed light on the key features, enablers, and strategies for WCS through a critical literature review. The methodology is based on content analysis to devise sound policies for developing WCU in GCC. The study reveals key attributes that define WCU in a global context. WCU inspires universities to re-visit the value proposition and develop foresight to respond to market demands and policy agenda. Adopting WCU as a target and brand implies the need for digital transformation that will influence universities' structure and processes, which will foster a new culture of excellence and innovation. The study recommends articulating a unique model for a WCU that is informed by local knowledge and culture.**

**Keywords:-** *World-class University (WCU), Education Strategy, Higher Education, Education Quality, Knowledge-based Economy, Gulf Cooperation Council (GCC).*

## I. INTRODUCTION

The “world-class” term refers to the objective of attaining and/or sustaining the competitiveness of the World-Class throughout the production of excellence accomplished by the top performers (Dudek, 2016). In the higher education context, world-class university (WCU) is reserved for top-class universities among the top 100 in teaching and research.

Besides, WCU defines a higher education institution (HEI) to perform and disseminate knowledge and deliver quality teaching based on research (Baskaran, 2017). According to Pillay (2011), HEI is a knowledge worker provider to foster economic growth and progress.

The state of HEI is characterized by institutional inertia, budget constraints, and mature human capital. There is a critique from policy circles that HEI is not delivering the needed human capital for the market. Consequently, there is pressure from the community and government to reform education at all levels and respond to technological changes and market demands. Furthermore, in a digital era, technology enables HEI to adopt new business models and innovation in teaching and learning pedagogy (Rof et al., 2020). Open sources and e-learning are disrupting the conventional models of HEI.

The response is to enhance the HEI's organizational innovation to strengthen competitiveness and adopt new standards and targets using WCU as a key performance indicator. Realizing that nations' competitiveness is measured by the quality of human capital and HEI, policymakers are setting targets to establish WCU as part of the differentiation strategy. This implies a transformation of the culture, structure, processes, and strategy of HEI. Besides, this new target of becoming a WCU necessitates the formulation of a new business model, new partnerships with industry and community, and HEI's new roles.

According to Abonyi (2016), Higher Education Institutions (HEIs) have a superior potential in changing an economy by playing as one of the most significant effective ways of knowledge transfer to students, graduates, and then to the country's economy. They perform an extremely vital role in the emerging knowledge society by contributing to a learning society's progress. Moreover, Ramakrishnan & Yasin (2012) stated that universities contribute to nationwide improvement by preparing graduates for future jobs. Therefore, the country's higher education institutions' expectations will face more challenges (Al-Alawi, Al-Marzooqi, & Mohammed, 2007; Hazelkorn, 2013; Alharbi, 2016). Higher Education Institutions should then meet students' and societies' needs in light of their abilities and interests (Chen et al., 2015).

Moreover, as Yusuf (2017) indicated, universities face a continually changing and healthy competition in the education market; therefore, there would be transformation and challenges in the future educational system. Besides, they need to identify the proper means to advance their performance to develop and adapt new business models, structures, and systems to align with the transformation plan and ensure sustainability. In terms of universities' transformation process, leaders, academics, policymakers, and other participants in the higher education area, are getting a better understanding of how different related actors within the university could contribute to strategic visions and change processes. Moreover, harnessing networks' power is the key to ensuring organizational learning and building a shared vision, as Intsiful (2015) stated. Additionally, university stakeholders use rankings to influence their accreditation decisions, financing, sponsorship, and employee recruitment. Besides, they believe that rankings help to build their institutional reputation and position. On the other hand, students are using rankings to "shortlist" their universities' choices (Hazelkorn, 2013).

However, the importance of higher education varies enormously between different nations. For example, countries with ambitions to be ranked among developed countries pay great attention to improving their educational practices, procedures, and systems (Intsiful, 2015).

Accordingly, the higher education sector leaders are re-evaluating their strategy and policy to cope with worldwide dynamics, complexity, growth, and expenditure to co-create models of World-class universities. At the same time, WCU plays an essential role in training scientists, professionals, high-level specialists, and researchers. Therefore, the economy needs this type of model to produce new knowledge that supports the national innovation system (Aturupane, 2009). Furthermore, according to Söderberg et al. (2017), as innovation includes a set of dimensions, their main challenge is to create an education system with an enabling environment that can develop human resources' capabilities.

Moreover, according to Loeb et al. (2017), the university environment contains a set of complex infrastructure, which includes 1) formal and informal networks, 2) government and academic organizations, 3) support and professional services, 4) capital sources and physical entrepreneurship structure, 5) alumni engagement, 6) incubators, 7) prototype development services, 8) university startups seed funding, and 9) technology transfer services. Therefore, it is essential to harness these resources to achieve high-quality education linked to the national innovation system (NIS).

Also, as Bejinaru et al. (2016) revealed, a world-class university has to play a role in the nations' international competitiveness by directly impacting life-quality and life-the level of their citizens. Therefore, if the need to compete is now required in global higher education institutions, world-class university significance needs to be notable (Salmi, 2009).

According to Altbach (2004), "Everyone wants a world-class university, and no country feels it can do without one". Moreover, higher education institutions in many regimes have been restructured. The world-class university has become the cure to guarantee the worldwide economic success based on the top 20, 50 or 100 internationally-ranked universities' characteristics (Mohrman 2008) argued. Therefore, to be "world-class", the university has to reach the standard included in the Lists of World university rankings, as Tayeb (2016) declared.

Universities are considered the primary phase of educational excellence in the knowledge-based economy. As changes happen worldwide and quickly in higher education, the establishing of WCU becomes a supreme global requirement (Mehrotra, Elias, & Al-Alawi, 2019; Alhazmi & Yahmed 2017, Al-Alawi et al. 2019). Hence, governments should give more effort into constructing world-class systems that provide a wide range of good quality higher education institutions with distinctive missions, as Salmi (2016) argued.

Altbach (2015) stated a significant advantage from debating on world-class universities, such as focusing on improving the educational standards on universities' roles in their society. Additionally, how higher education institutions can fit in the country's higher education system and the global academic world. Besides, a world-class university notion reveals the world's leading research-oriented educational institutions' values and norms. For that reason, it is not compelling for universities to struggle for excellence and competition, which would inspire organizational innovation. But, this struggle is difficult when it comes to measuring academic quality and accomplishment. Thus, "it might well be the case that the innovative higher educational energies and resources should be focused on more realistic and perhaps more useful goals". The study by Al-Jayyousi, Al-Alawi, Al-Mahamid, & Bugawa (2019) recommended integrating organizational innovation to adopt entrepreneurship, strategic

innovation, and learning at HEI.

Furthermore, there are several motives for building and achieving world-class universities, and the main reason is the need for qualified, professional, and educational requirements in Higher Education Institutions' outcomes. Moreover, there is an increasing reflection from the globalization on our societies, economy, and labor markets, which will require higher education to provide a suitable readiness and ground for their graduates to meet this demand. Moreover, to achieve the goal of building the university into a world-class level, the university has to adopt strategies in management and governance, funding, students' and researchers' talents attraction, infrastructure, research, and internationalization, as argued by Boamah (2014).

The critical literature review will start by raising a set of key questions in Research Scope and Questions; then, World-Class University classifications will address definitions, enablers, and strategies for WCU; and finally will outline conclusions and recommendations.

### Research Scope and Questions

Many researchers addressed WCU from different angles. This literature review's scope will be focused on definitions, characteristics, enablers, and strategies for WCU. Key questions about WCU will attempt to the critical attributes of WCU based on content analysis from databases, published papers, online doctoral thesis, and books from 2009 to 2019. The questions are:

1. What is the definition of world Class University?
2. What are the characteristics of a world-class university?
3. What are the fundamental strategies in the road to world-class universities?
4. What are university rankings?

### World-Class University

This section covers the definition, characteristics, and basic strategies in the road to world-class universities, university rankings, and the Arab research universities' situation.

#### The Definition of World Class University

According to Ruby (2014), there are some considerable differences between World Class University definitions, plus, these differences in the definitions are in the primary purposes for obtaining world-class universities. For example, in China,

building first-class universities is to "train high-level creative talent, turn out high-standard, original research results, and make outstanding contributions to society". While in Germany, Korea, and Japan, the government provided excellent initiatives to build a world-class university to emphasize the significance of research as a principal benchmark on the reputation of their institutions. However, the author stated that although teaching is usually mentioned as an element of a great university, it is seldom cited as a prime initiative for having a world-class university.

Meanwhile, the first noticeable variance in a world-class university definition is to agree upon a naming. Therefore, some refer to "flagship universities" (Bunting et al., 2014; Douglas 2014; & Yonezawa 2007), others use the term internationally recognized "research universities" (Levin, 2010; Saaid, 2014, & Rosovsky 2014). At the same time, Marginson (2012) uses "super brands" to refer to the top six universities in higher education rankings. However, the majority use "world-class university" (Altbach, 2005; Altbach & Balan, 2007; Salmi 2009; Shin 2009; Rhee 2011; Yang & Welch, 2012, Al-Alawi, 2019). However, the most common definition from all these different meanings is "a university commonly held to be one of the best in the world".

Furthermore, Altbach (2015) defines WCU as a "Top rank university based on excellence in research, academic freedom, a sense of intellectual excitement, governance (the academic community has control over the central elements of academic life), adequate facilities, and adequate funding." Moreover, Aula and Tienari (2011) stated that it is the university that permeated the reputation-building.

On the other hand, world-class universities were defined by Wang et al. (2013) as "Universities which produce transformational research outputs and develop nation's competitiveness in the global knowledge economy are World-Class Universities." Additionally, Salmi (2009) described WCU as an operating environment that inspires managerial independence and innovation, while Salmi (2016) acknowledged the status of a world-class university based on international recognition. Although the world-class status goal is clear, still the world-class status definition is not yet clear (Huisman, 2008) concluded.

Table 1 summarizes some concepts from the mentioned definitions from the literature.

CONCEPTS	STUDY
Universities engaged in teaching, research, and services	Baskaran (2005)
Top-class universities	Baskaran & Balan (2007)
Rank among the top 100 universities	Baskara(2017); Bunting, Cloote & Schalkwyk (2014)
Flagship universities	Douglas (2014); Saaid (2014); Yonezawa (2007)
Research universities	Levin (2010); Levin (2010); Rosovsky (2014)
Superbrands universities	Marginson (2012)
World-class university	Atlbach (2005); Altbach & Balan (2007); Shin (2009); Salmi (2009); Rhee (2011); Yang & Welch (2012)
One of the best universities in the world	Salmi (2009)
Reputation-building university	Aula & Tienari (2011)
Global knowledge economy nation's competitiveness developer university	Wang Et Al. (2013)
International recognition	Salmi (2016)
Excellent in research, academic freedom, intellectual interest, governance, and funding	Bunting, Cloote & Schalkwyk (2014)
Universities inspire managerial independence and "innovation."	Salmi (2009)
International recognition universities	Altbach (2015)

Table 1: Concepts used to define the world-class university

#### Word-class University Definition:

Table 1 illustrate the concepts used to define a world-class university. The working definition of a World-class university is a university with a solid commitment to excellence in the quality of processes, inputs, and outputs. Besides, it is a supreme development in the domain of international higher education, which places it at the center of international higher education policies. Moreover, it becomes critical in driving economic growth and providing insights to globally competitive institutions and higher education transformations.

#### The Characteristics of World Class University

As Huisman (2008) concluded, worldwide universities stand higher on many stakeholders' plans and agendas worldwide. Moreover, it is supposed to have a significantly ranked research output, excellent facilities, high ranked research output, a name that exceeds the local boundaries, and a culture of excellence (Douglass, 2016). Therefore, there is a need to study some features that are likely to impact higher education institutions on their path to constructing a world-class university, as argued by Boamah (2014).

Moreover, Salmi (2009) offered a small number of generalities in defining "world-class university": "abundant resources," "high concentration of talent," and an operating environment that inspires managerial independence and "innovation". Douglas (2016) considered some "generic but informative traits" guiding and advising institutions' leaders.

While Fu et al. (2018) indicated, the pursuit of world-class universities depended on globalization logics in the university, which showed through competition encouragement, effectiveness and performance, excellence, and high return rates. Moreover, it has to be presented on how educational and economic policies are discussed in the university system and affect higher education governance and academics' minds.

Murdowo (2018) mentioned, benchmarking and international cooperation, academic autonomy, governance, government subsidies, university management, autonomous and independent are factors for attaining a World-Class University. However, Rabossi & Salto (2018) specified that presence of a critical mass of International top students and outstanding faculty, Sources of financing, and the degree of academic and managerial autonomy in the university are the factors in building World-Class University. Additionally, Ruby (2014) considered, 1) shared governance with a collegial administrative style, 2) academic freedom, 3) merit selection of students and faculty, 4) significant human contact "real as opposed to virtual encounters between student and teachers", 5) preservation and transmission of culture as one of its missions; and 6) non-profit status, as a set of six characteristics of the top research university.

Furthermore, Altbach (2004) Suggested some world-class universities' characteristics, including Freedom in academics and an environment that is stimulating intellectually, excellence in research, self-governance

internally, and sufficient funding and services. Besides stated, “Everyone wants a world-class university. No country feels it can do without one”. However, Mohrman (2008) declared that although the world-class status goal is clear, still the world-class status description is not yet clear. As stated by Altbach (2009); Liu (2009); Wende (2009), world-class universities are committed to the creation and dissemination of knowledge in a range of disciplines and fields; the delivery of elite education at all levels; serving national needs, and furthering the international public good.

Therefore, it is crucial to understand WCU characteristics for the entire academic communities and especially for those who are having a structural position in the university to have the ability to evaluate the university performance. Moreover, it will allow them to formulate policies and programs that will direct all the university resources to perform continuous improvements to realize WCU. Hence, according to the above studies, Table 2 illustrates some characteristics of WCU, which have been summarized from the previous literature.

Table 2: Summary of the characteristics of WCU (Researcher)

Characteristics	Authors
Proper leadership	Altbach and Salmi (2011); Salmi (2016); Fu et al. (2018); Ramakrishna & Yasin (2012)
vision	Altbach and Salmi (2011); Rabossi & Salto (2018); Ramakrishna & Yasin (2012)
talent	Boamah (2014)
resources	Altbach and Salmi (2011); Ramakrishna & Yasin (2012)
governance	Altbach and Salmi (2011); Ramakrishna & Yasin (2012); Boamah (2014); Fu et al. (2018); Rabossi & Salto (2018)
innovation	Altbach and Salmi (2011); Ramakrishna & Yasin (2012); Douglass (2014); Boamah (2014); Fu et al. (2018);
internationalization	Altbach and Salmi (2011); Ramakrishna & Yasin (2012); Douglass (2014); Boamah (2014); Fu et al. (2018);
culture of excellence	Altbach and Salmi (2011); Ramakrishna & Yasin (2012); Douglass (2014); Fu et al. (2018)

Some lessons related to WCU characteristics can be drawn from Table 2. The main features of WCU depend on the university governance, vision, culture of excellence, and innovation in addition to the quality of its input, process, and output (i.e., the quality of its leaders, instructors, employees, accommodations, fund supply, education, learning, research, graduates, infrastructure, academic culture, and other resources). Moreover, other WCU characteristics are the development of the university's intellectual atmosphere locally and globally.

**Basic strategies in the road to world-class universities**

According to Kakuchi (2015), the government’s role has a critical impact on fostering world-class universities' development more than before due to their high research facilities and capacity costs. However, currently, an environment encouraging strategies and initiatives from the public is needed to create a world-class university. There are three basic strategies, which were identified from the International experience, in establishing world-class universities.

Table 3: Summary of Approaches for basic Strategies to Establish World-Class Universities (adapted from Kakuchi, 2015).

Approaches to Establish World-Class Universities	Characteristics	Countries
Upgrade existing universities	Adopted most regularly by governments Significantly cheaper than the third approach	China has adopted the approach since the early 1980s.
Encouraging existing institutions to unite and change into merged universities	Challenging to manage effectively and often does not reach the expected outcomes Merging universities on a regional foundation or through an innovation fund from the government to reward similar institutions merging	France and Denmark adopted the approach in recent years.
Building a new world-class university from scratch	Make it possible to operate the new universities with unconstrained financial funds and with a non-traditional university’s cultural influence on people The best approach in countries that prevent traditional universities from being innovative	Kazakhstan and India adopted the approach.

Some lessons related to the approaches for basic strategies to establish World-Class Universities can be drawn from Table 3. There is no universal recipe for “building” a world-class university. It all depends on each country's circumstances, culture, and institutional models, which are different. Therefore, any country has to choose a strategy that will be suitable to play within its resources and strengths. However, many lessons about resource richness, flexible governance engagements, great attention to talents successful

approaches can be learned from international practices. Consequently, all these lessons will help the universities move in the proper direction, either through upgrading or merging existing institutions to creating new institutions altogether or by building a new world-class university from scratch. However, Altbach and Salmi (2011) identified several “accelerating factors” through policy research, which can play a progressive role in building World-Class Universities, summarized in Table 4.

*Table 4:* Summary of acceleration factors that can play a positive role in building world-class universities (researcher adapted from Altbach and Salmi 2011)

<b>Acceleration Factors in Building World-Class Universities</b>	<b>Description</b>
The first factor is to depend on the concentration on bringing large numbers of overseas scholars to their country.	Fairly constructing the institution's educational power. Examples: South Korea and Hong Kong
The second factor is using English as the primary university language.	Significantly enhancing the ability of the institution to attract very qualified graduate students and foreign academics. Examples: Singapore
The third factor is the concentration on niche areas.	Achieving a critical mass more rapidly. Examples: South Korea, Hong Kong, Russia, and London
The fourth factor is the concentration on the use of benchmarking.	Guiding the institution in its improvement efforts Examples: Shanghai Jiao Tong University, which carefully compared its strategic planning work to the leading Chinese universities. Therefore, currently, the famous World Universities Academic Rankings are recognized as the “Shanghai rankings,” which have emerged from such benchmarking efforts.
The fifth factor is the introduction of educational innovations and a significant curriculum.	Curriculum and pedagogical innovations, such as teaching and research integration and establishing a supportive digital library. These innovative features are essential for new institutions to attract students away from the existing universities and get the risk of being enrolled in an “unknown” program. Examples: Hong Kong, US, Russian, and British models.
The sixth factor worth emphasizing is the need to remain alert and maintain a sense of determination to avoid complacency.	Inspiring leadership, self-assessment, and monitoring to continuously recognize dysfunctions or threats, the capability of swift action to address them, and the readiness to continually explore improvement areas.

Some lessons related to acceleration factors that can play a positive role in building World-Class Universities can be drawn from Table 4. Higher education institutions need to stay aware, responsive, and sustain a sense of determination to develop their World-Class status.

**World Class University rankings**

In higher education, university ranking is not a new phenomenon; it is progressively has become distinguished in the system of higher education all around the whole world in the last three decades, mainly the most recent decade (Brian, 2013).

According to Hazelkorn (2013), recently, higher education faces many fast challenges such as individual, social, cultural, and economical quick changes due to the need for rapid new knowledge creation. Besides, countries need to have the ability to develop talent. Moreover, higher education institutions' governance and management have an essential core role in the productive economy and the universities'

outcomes value, significantly connected with career opportunities and education qualifications. Therefore, there was a need for the existence of higher education rankings, and its arrival was not surprising.

Hence, higher education leaders and decision-makers in today's world became more aware of identifying, defining, and designing their strategies and ambitions according to universities' global ranking. Consequently, higher education institutions can create a comprehensive profile that allows them to recognize their weaknesses, strengths and measuring their approaches and execution according to indicators belonging to several leading global rankings. Such main global rankings are different in their data collecting way and methodologies. Moreover, Main Global Rankings differ in their type of ranking; for example, some concentrate on research only, while others focus on producing league tables, while the rest are doing Multirankings without producing league tables (Haupt, 2016). Table 5 shows the Main Global Rankings in the world.

Table 5: Main global rankings (researcher adapted from Haupt, 2016)

Main Global Rankings	Starting Date
Academic Ranking of World Universities [ARWU] (Shanghai Jiao Tong University)	2003
Webometrics (Spanish National Research Council)	2003
World University Ranking (Times Higher Education/Quacquarelli Symonds)	2004–2009
Performance Ranking of Scientific Papers for Research Universities (HEEACT)	2007
Leiden Ranking (Centre for Science & Technology Studies, University of Leiden)	2008
World's Best Colleges and Universities (US News and World Report)	2008
SCImago Institutional Rankings	2009
Global University Rankings, RatER (Rating of Educational Resources, Russia)	2009
Top University Rankings (Quacquarelli Symonds)	2010
World University Ranking (Times Higher Education/Thomson Reuters [THE-TR])	2010
U-Multirank (European Commission)	2011

Some lessons related to the leading global rankings can be drawn from Table 5. There is no comprehensive table describing such world rankings; moreover, the value of those differences between the leading global rankings outcomes lies in their analysis.

## II. CONCLUSIONS AND IMPLICATIONS

In conclusion, since universities are deeply embedded in their nations, they must reform and align their strategies to foster national development goals. The notion of WCU emerged as a response of policymakers to improve HEI and enhance HEI's quality and competitiveness. The adoption of a WCU entails a transformative vision of organizational culture, structure, and strategy. WCU may be viewed as a transformative vision for nations to set new standards for higher education. This is critical due to disruptive technologies and globalization, where knowledge workers are likely to be replaced by machines. Hence, WCU entails a new philosophy of teaching and learning that fosters lifelong learning and critical thinking.

At the strategic level, WCU presents a differentiation strategy that emphasizes excellence and innovation at all levels, including global partnerships, technology adoption, enabling environment, teaching methods, funding model, linkage with industry, R&D, and patents. WCU inspires HEI to re-visit the value proposition at the business model innovation arena and develop foresight to respond to market demands and policy agenda. At the organizational innovation dimension, the adoption of WCU as a target and brand implies the need for digital transformation that will influence universities' structure and processes, which will foster a new culture of excellence and innovation.

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