

A Comparative Analysis of Teaching, Learning & Research Practices of International vs Indian Universities experiences: A Way Forward¹

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Abstract

Effective teaching, learning, and research practises make a significant contribution to higher education institutions' ability to excel and compete on a global scale. Since 2013, when researchers became aware of the Times Higher Education-World University Rankings list, the most pressing research questions have taken root in their minds. It was somewhat distressing to see that there was not even a single Indian institution/university included among the world's best 225 universities at the time (2012–13). Alarming, with a progressive decline in position over the years, the top Indian institution's ranking has fallen to 314 in the world ranking list as of 2021. This leads to the present study to inquire as to why Indian universities are not globally competitive. What teaching, learning, and research practises or strategies should Indian higher education institutes pursue in order to be globally competitive?

The current paper is an empirical study that examines the teaching, learning, and research practises used in higher education institutions abroad and in India. The findings indicated that there is a significant difference in this behaviour between international and Indian higher education institutes. When a comparison is made, a significant gap emerges. The present study makes several recommendations to Indian universities in order for them to compete on an international level and eventually appear on the list of world institutions specific to teaching, learning, and research practices. While there is no one-size-fits-all solution, the current study will draw logical conclusions and observations in order to increase the competitiveness of universities and higher educational institutions. The observations and suggestions are not exhaustive but serve as a baseline for higher education institutions. In addition, because the findings are based on a lot of empirical study observations, higher education institutions might want to look into more specifics in implementation and micro-level strategy.

Key words: Competitive Advantage, Global competitiveness in education Higher Education, Indian Universities, Research, Teaching.

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Introduction

Higher education is the most effective tool for fostering the future development of a knowledge-based society. It provides individuals with an opportunity to ponder, reconsider, renovate, and regenerate humanity's most pressing economic, social, cultural, ethical, moral, and spiritual challenges. It makes a significant contribution to national development by disseminating specialised information and skills. Higher education, being the pinnacle of the educational pyramid, plays a critical role in developing high-quality human capital for the country. Additionally, the human development index of a country is determined by the quality and quantity of its educated people. While universities play a critical role in ensuring that higher education is delivered to youth within their respective countries and around the world, it is critical that these universities maintain the highest standards of teaching quality, innovation, research, accountability, governance, and transparency in order to ensure excellent knowledge delivery and, most importantly, practical application of knowledge, addressing the pressing issues society is facing.

Evolution of Higher Education System across the World

Globalisation, rising public service expenses in general, and the evolution of the knowledge-based economy in particular, have altered the character and functioning of higher education in a number of countries worldwide, albeit the local dimension remains significant. Both Europe's and Asia's higher education systems have been undergoing major reorganisation in order to improve their competitiveness and hierarchical positioning within their respective countries and in the global market (Wang, Cheng, & Liu, 2013). Interestingly, since around 2005, universities in Hong Kong have been subjected to major review exercises in order to establish their uniqueness in terms of research experience and innovation. They have been asked to differentiate themselves in terms of roles and missions, identifying major strengths and developing their centres of excellence. Throughout that time period, academics in Hong Kong faced increased government pressure to conduct international research, demonstrate a high level of teaching expertise, and contribute to professional and community services (Mok, 2005). This situation is seen across several countries.

India's inspirational history includes the educational centres of Nalanda, Takshashila, and Vikramashila, which served as educational destinations for scholars from all over the world. The educational system of the past represented its illustrious legacy and culture and strove to meet the needs of a society that was not borrowed from another land but developed with a strong indigenous heritage. However, the world's top university ranking organisations (THE, QS, ARWU, and so on) show that, despite a long history of high-quality higher education, India is now trying to get a foothold among the world's best universities.

When we look inwards and understand, through Lord Macaulay's articulation of British education in India in his 1835 Minutes of Education, that stated, "At the moment, we must make every effort to create a class that can act as a translator between us and the millions we govern." This group needed to be Indian in blood and skin tone, but British in taste, opinion, morals, and intelligence (Joseph, 2020). This resulted in the establishment of an affiliated education system in India, which was controlled by the British with the intention of developing

a more clerical and functional pool of manpower that followed administrative instructions with little room for originality and innovative thinking among the Indian youth who graduated from those universities. After decades of struggle for independence, India eventually achieved independence from British colonial authorities in 1947, providing an opportunity to rethink the Indian educational system. In the post-independence period, India's educational system expanded as a result of a stronger emphasis on higher education. Education's significance as a catalyst for societal change and growth has been widely recognised. In a society, change is unavoidable, and education has played a critical role in the growth of that civilisation (Salunkhe, 2020).

Globalisation and Need for Global Competitiveness

Internationalisation and global competitiveness in higher education are critical concepts to comprehend as the globe becomes a global village and globalisation becomes the recognised standard of the world. According to Ofori and Kwarteng (2020), internationalisation of higher education entails going beyond the physical limits of institutions and countries in all fields of higher education and information exchange. Researchers have found that in higher education, knowledge and information are regarded for their ability to facilitate greater integration. The changes in higher education that have taken place as a result of globalisation present major potential for most universities to prosper in the market for higher education services. As a result, the internationalisation of higher education is unavoidable in today's world of globalisation. Achieving global competitiveness is essential for India as a nation to maintain its position and influence. Global competition in higher education would help India make world-class people who could help both the country and the world grow.

Indian Higher Education in Global Context

Higher education reform is becoming the new norm around the world, particularly in developing countries. One such rising nation is India, which has recently undergone a dramatic ideological, pragmatic, and policy direction shift. There has been unparalleled growth in India's higher education sector. Higher education expansion is typically related to guaranteeing equity and access because of India's unique social, political, and economic setting. When it comes to higher education in the developed world, the term "expansion" is typically used to describe the creation of world-class universities. It's also important to note that the sector's long-term viability, sustainability, and growth all depend on a high level of quality in higher education (Singai et al., 2020).

Indian policymakers are working hard to modernise Indian higher education and make it more globally competitive, as evidenced by this. We must, however, reexamine the paradigms and frameworks of educational offer if we are to effectively deal with globalisation. Even though India has the largest number of higher education institutions in the world, Ernst & Young (2013) found that the country lags far behind when it comes to providing high-quality education to its citizens. There is a growing worry among some that India's internationalisation strategy is focused on promoting soft power and diplomatic contacts rather than financial gains (Varghese, 2020). According to a report released by Ernst & Young (2014) and the Federation of Indian Chambers of Commerce and Industry, "While Indian higher education has made

considerable progress in terms of capacity creation and enrolment, especially in the last decade, it lags significantly in terms of global relevance and competitiveness." Additionally, this report identifies a number of issues, including poor employment rates for graduates, a lack of attention to entrepreneurship, and a complicated regulatory environment, as important gaps.

While talking about the internationalisation and globalisation of higher education, it is vital that global university rankings be included in the assessment of global competitiveness across nations. Many eminent academics agree that one of the most significant effects of globalisation is the increased competition among institutions to demonstrate their performance through global university league tables or rating activities (Marginson, 2006; Altbach, 2015; Salunkhe, 2020). Universities are increasingly being shaped by rankings and league tables, which include various quality measures increasingly used in other kinds of organisations as well (Altbach & Salmi 2017). That's why there have been massive debates around the world since global university rankings were introduced about the relationship between world-class universities and university rankings. There are only 63 Indian institutions among the top 1526 universities in the world according to the Times Higher Education-World University Ranking list for the years 2021-22, which is extremely disappointing. In its global list for 2021, China has 91 institutions, the UK has 101 institutions, Japan has 116 institutions, and the United States has a massive 181 institutions. (THE-World University Ranking 2021-22, 2021).

Predominant Parameters of Globally Competitive Universities

Recognising the essential features of a world-class university is plainly insufficient for building a WCU. Additionally, due to confidentiality concerns and the ranking organisations' failure to disclose entire details of their methodology and the breakdown of micro ranking weight-ages, there is some confusion about what the rankings' factors precisely quantify. One thing is certain: it is impossible to quantify every facet of the complicated concept of university performance. One can only choose to broadly describe the most critical parameters or core regions that are critical to the operation of a WCU. However, the present study focused on finding the most critical factors or key areas of university administration and management that have a significant impact on a WCU's excellent performance. In this view, the four most critical factors or core areas based on the basic characteristics and attributes that characterise the success of a world-class higher education institution are summarised as: 1) Student Selection and Ongoing Engagement; 2) International Outlook and Collaboration; 3) Funding & Finance; and 4) Infrastructure & Technology.

The purpose of this study is to examine the differences in teaching, learning, and research practises between international and Indian universities, as well as to determine whether there is a gap in approach and strategy intervention, and, if so, where and how that gap might be overcome. While the other parameters stated can't be ruled out, the present paper focuses exclusively on these three.

Review of Literature

The review of literature focuses on the global and Indian higher education sectors, the need for educational reforms in higher education in India, globalisation and internationalisation of

higher education, the concept of global competitiveness, and the predominant characteristics of a world-class university. The content focuses on how research, teaching, and learning in the field of higher education administration and governance has changed over time, as well as examples of universities and higher education institutions. In 1991, a world-renowned scholar in the field of global higher education, examined important events affecting academic institutions globally in the early 1990s. He remarked that the post-World War II period's expansion has been particularly dramatic in the third world. He noted further themes, such as increased access to education, the tension between accountability and autonomy, adjustments and reforms prompted by social expectations for higher education, shifting funding and access patterns, and the political involvement of students, which were common in higher education institutes.

Later, there was a clear interest in comprehending the concept of benchmarking when researcher Altbach (1995) stated that increasing competition, accountability demands, and increased volumes of available information were altering how institutions of higher education operated in the mid-1990s. To achieve significant and permanent improvements in efficiency and productivity in higher education, institutional structures must incorporate a new style of thinking or paradigm that promotes efficiency and a desire for continuous learning, teaching pedagogy, and research output.

In his study "Globalisation and Education," Bagley & Portnoi, (2014) made a worrisome comment about globalisation and its impact on education in underdeveloped countries. He conducted an analysis of the relationship between globalisation and education, and discovered that while global economic growth has improved opportunities for nations with higher educational standards (mostly in East and Southeast Asia), it has made growth more difficult for countries with lower educational standards. He stated that globalisation has harmed efforts to raise educational standards in places such as Africa, where public spending has been reduced during adjustment. Thus, virtuous and vicious cycles of development have emerged, with countries with a high spread of education experiencing high growth and generating resources for further education development, and countries with low or negative human resources experiencing low or negative growth and a diminished capacity to develop their educational system. Collins & Park (2016) addressed how emergent global governments are generated through new reputational imaginaries, demonstrating how even a freshly established nation may become recognised and adored globally through intentionally creating globally competitive universities. Over the last two decades, enumeration has emerged as a significant driver in shaping the governance structures of globalising higher education, they stated. Whether on the gleaming websites and documentation of the world's "top universities" or in more refined regional and subject guides, accreditation schemes, journal metrics, or h-indexes, technologies for measuring and ranking academic performance have not only created new imaginaries of reputation but have also begun to reshape institutional behaviour in pursuit of enhanced performance."

Indian Higher Education

Jana and Maiti (2019) said that in 1950–51, there were around 30 universities, 695 colleges,

and 3.97 lakh students enrolled in higher education. They noted that India's post-independence period saw a massive quantitative expansion of higher educational institutions. In 2016-17, India's higher education system had 864 institutions, around 40,000 colleges, 3.57 crore students, and 13.65 lakh professors (Government of India, 2018). In addition, India has the third-largest system of higher education in the world, after the United States and China. It has a gross enrolment ratio of 25.8%, which is less than the United States and China.

Harminder (2015) highlighted concerns about academic quality standards in India's higher education system. He noted that India's education system is still falling short of global quality norms. He found that the basic flaws in the Indian higher education system are a lack of transparency and disclosure, as well as inadequate quality requirements. While India has made tremendous strides in the field of higher education in the post-independence period, the gross enrolment ratio and quality of higher education in India are not encouraging. When examining the findings of the preceding studies, it is clear that the quality of Indian HEIs is markedly low. However, the exact strategic intervention or method for improving educational quality that allows Indian HEIs to become world-class isn't explicitly addressed in previous studies or the work that this study looks at exploring as a major objective.

Observations on Indian Higher Education system

Clearly, there are several articles and publications expressing the view that India's higher education system falls short of global norms. Natarajan (2013) in the Indian Education Review identified the following reasons for low quality delivery in Indian higher educational institutions: a lack of vision, autonomy, leadership, appropriate governance, commitment and dedication, resources (physical, human, and financial), teamwork (individual vs institutional aspirations), complacency, ambition, fatalistic approach to life and work, sab chalta hai attitude (everything is OK), and a large gap between planning and implementation.

In his paper "A World-Class Country Without World-Class Higher Education: India's Twenty-First-Century Dilemma", Altbach (2015) argues that India cannot overnight establish internationally recognised research-oriented universities. He stated that India will need to establish a dozen or more universities capable of competing on a global scale in order to fully engage in the emerging global economy. He asserted that India is doomed to remain a scientific backwater in the absence of these universities. Altbach (2015) further observed, "Unfortunately, India's underdeveloped higher education sector is the strategy's Achilles' heel." India's deliberate underinvestment in higher education over the last decade has resulted in a mediocre academic system that produces neither world-class research nor a sufficient number of highly skilled scholars, scientists, or managers to sustain high-tech development. Neither are Indian institutes capable of teaching or doing research on a par with world-class standards. Till today, the results have not shown a positive indication of this.

Simultaneously, with the launch of India's new national education policy 2020, Aithal & Aithal (2020) emphasised the importance of strategic implementation of the NEP 2020 policy guidelines in order to ensure its effectiveness. They indicated that in order to ensure effective implementation, a top-down strategy among stakeholders is necessary. Through the use of

powerful mantras such as clean but competent members of implementation committees, light but stringent regulations, top-to-bottom transparency, annual performance-based increments and promotions, periodic auditing of organisational performance through NAAC, and punishing for inappropriate behaviour through a draconian penalty, a faculty-focused and student-centered national education policy 2020 can be implemented successfully within the stated timeframe of 10-15 years.

The researcher inferred from the above ROL on global and Indian higher education that a widely accepted and expressed concern by the majority of researchers, academicians, and authors from 1991 to 2021 is that Indian universities must definitely gear up and immediately work on improving the following aspects of their functionality in order to remain globally competitive:

1. Global standing, presence, associations, and collaborations.
2. Teaching, learning, and research approach.
3. Internal quality concerns while benchmarking against world standards.
4. Faculty recruitment and retention issues, along with compensation,
5. Attracting faculty and students who are interested in research and innovation.
6. Take advantage of massive amounts of funding and financial grants to help upscale the world's best universities.
7. Massive advancements in the way universities up-skill their graduates
8. Have a foolproof strategy and execution plan in place for NEP 2020.
9. Make HRD's culture robust.
10. Appropriate mix of accountability and autonomy.
11. Government policies that are progressive and supportive of university advancement.

While the ROL makes abundantly plain and evident the difficulties and weaknesses of Indian universities and the education system in general, the precise strategic approach to resolving these concerns remains hazy.

Research Gap

The majority of research that is reviewed in this study in the area of higher education between 1990 and 2021 revealed that:

1. There is less consensus on a precise solution or strategy for the development of a globally competitive institution.
2. The majority of scholars view this subject as a more humanistic and moral endeavour

than a scientific one, and there are few programmes of sustained empirical inquiry.

An unwillingness to evaluate the relative merits of divergent conceptual and methodological approaches using an acknowledged set of scholarly criteria forces researchers, policymakers, and practitioners to rely on their own judgments of what constitutes useful and valid knowledge.

The current study focuses on three critical areas or characteristics that contribute to the development of a world-class institution. These criteria are the result of a study of previous work and have the potential for additional exploration. While these three dimensions are not mutually exclusive, they greatly contribute to our understanding of the aspects and indications that contribute to the performance of a world-class institution. The three areas that are explored in the present study are:

1. Teaching
2. Research
3. Learning

Research Methodology

The present study is an empirical exploration of the factors and indicators in making a World class Institute from the angle of teaching, research and learning paradigm. This study makes several contributions to the literature. First, we respond to calls for attention to the key drivers of building World class Higher Education Institutes. We also respond to another call for attention to the potentially varying factors in International and Indian Institutes and what factors differ or are similar in this exercise. The study explore the relationship between these variables-teaching, research and learning in making the best higher education institute, and describes all the variables influencing. Following that, we describe the research methodology and present the results. Finally, we discuss the implications of the study's findings for both theory and practice, while what factors can be benchmarked on either side of the Institutes.

Research Questions

1. What are the predominant characteristic of a WCU?
2. What is the gap between top world-class universities and top Indian universities under teaching, learning, and research practices?
3. How and what strategies/practices/methodologies should Indian universities embrace in order to remain globally competitive in their most critical areas of teaching, learning, and research?

Objectives of the Research

1. To gain an understanding on predominant characteristic of a WCU.

2. To investigate the practices of International and Indian institutions of higher education in the areas of training, research, and learning.
3. Develop a viable strategic method for Indian institutions to become globally competitive, teaching, learning, and research.

Research Design

There is a need to investigate and comprehend the characteristics that define world-class higher education institutions, as well as how one might develop and strive towards developing one of these institutions. This was probed from the angles of teaching, learning, and research. The Times Higher Education World University Rankings (THE WUR) 2019 list was consulted, and universities/higher education institutions that appeared on the list of top universities were included in the study, with the goal of attaining a better understanding of teaching, learning, and research processes.

A suitable questionnaire has been developed, validated, and standardised. A pilot study was conducted to validate the questionnaire and the sample selection process. The universities that appeared in THE WUR 2019 were informed of the study's goal and purpose. Vice-Presidents, Vice-Chancellors, Rectors, Vice-Rectors, Provosts, Directors, Principals, Professors, and Associate Professors from well-known international and Indian universities are part of the sample for this comparison study.

The data collection process was done through qualitative questionnaires. The qualitative questionnaire was distributed and included both open-ended and closed-ended items. Respondents were given sufficient time to communicate back with their completed questionnaire responses. The purposive sample was used since the study's purpose was to determine the variables and reasons that contribute to institutes' being classified as world-class, as well as the lessons, best practises, and implementations that may be learned.

Research Approach

The current study utilised a qualitative strategy that is more descriptive and exploratory in character. Primarily through qualitative research, the study is able to investigate a broad range of dimensions of the concept of teaching, learning, and research, including best practises, areas for improvement, the research participants' understandings and experiences, their strategic vision, the ways that institutions work, and the significance of the meanings they generate. Thus, this research is mostly qualitative in nature, employing approaches that appreciate richness, depth, nuance, context, multidimensionality, and complexity rather than being embarrassed or inconvenient by them. Qualitative research, on the other hand, incorporates them directly into its analyses and interpretations.

Second, descriptive research is utilised to attempt to comprehensively characterise the best practises employed by various world-class higher education institutions and to recommend ideas for aspiring universities seeking to improve their global competitiveness from the teaching, learning and research preceptive. The close-ended questions in the survey questionnaire are designed to elicit specific, clear responses that aid the researcher in spotting

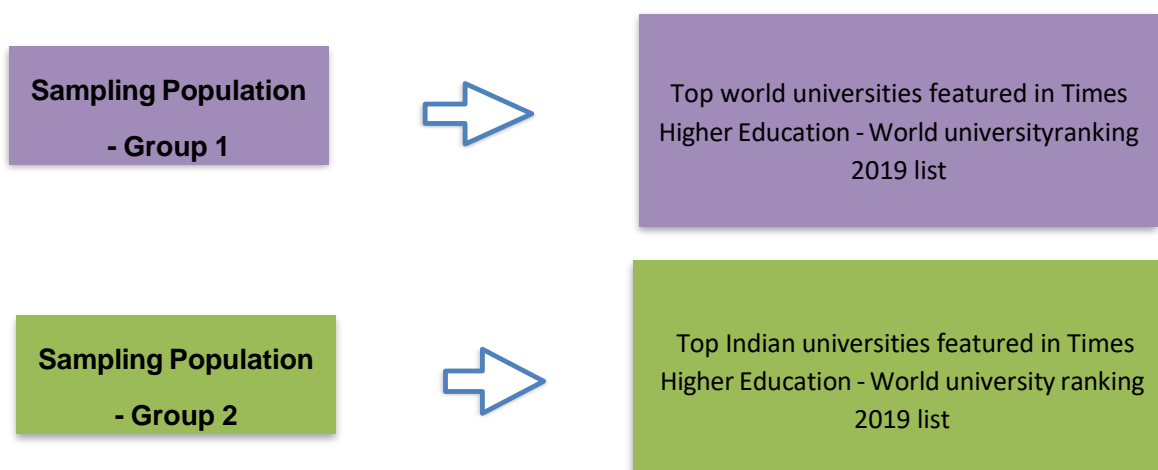
trends in the data and accurately predicting the ultimate outcome. Each parameter and variable that plays a role in the journey is explored, commented on, and analysed in relation to their role. The questionnaire's open-ended questions were expressly designed to accomplish this component of the study.

Sources of Data

The current study makes use of both primary and secondary materials. The data analysis results are all generated from primary sources. Secondary sources of data are analysed to get a better grasp of the study themes and to develop quality parameters for the questionnaire. Primary sources include the use of survey questionnaires.

Population: For Survey Questionnaire:

As one of the primary aims of this research is to extract and comprehend best practises from world-class universities, it is critical for the researcher to establish contact with senior



management members of world-class higher education institutions involved in producing these best practices. Thus, people who are at the strategic level of decision-making or who are directly involved in the decision-making process are specifically asked for their help. Additionally, because this qualitative research work attempts to analyse the functioning of an Indian university (data sample) and compare it to the functioning of an international institution (data sample), two distinct sampling populations are picked for data collection.

Survey Questionnaire Design

Given that one of the primary objectives of this research is to extract and comprehend best practises from world-class universities, it is critical for the researcher to establish contact with senior management members of world-class higher education institutions that are responsible for developing these best practises. Thus, respondents who are active in strategic decision-making or are directly involved in the decision-making process are specifically contacted for data collection. In addition, this qualitative research study will look at the workings of an Indian university and compare them to the workings of an international institution. To do this, two different sampling groups will be used.

Mode and Tool of Data Collection

Three strategies are used to collect primary data with the questionnaire distributed to university respondents. The participants were asked to respond to the questionnaire tool. Email correspondence was used to contact a sampling population from the individual universities. Following their agreement to take the survey, the survey questionnaire is sent to them through a cloud-based online survey platform.

Method of Data Analysis

Data Analysis of Survey Questionnaire Responses: This study used basic descriptive statistics such as frequency distribution, mean, and standard deviation for both international and Indian university data sets pooled together. The data is analysed using R and MS-Excel, which is optimised for descriptive statistics. R and MS-Excel are used to generate a variety of charts and graphs.

Data Analysis

International and Indian universities under the core aspects of teaching and learning practises followed at their universities were the focus. The predominant characteristics of WCU, essential capabilities of professors, action steps in creating a thriving and innovative learning environment, important aspects of developing curriculum, frequency of curriculum review, effective teaching approaches, effective evaluation methods, course delivery, and academic freedom to the teaching community are the core aspects that are being examined.

Table 1: Number & Percentage of Total Responses Received

Type of University	Count	Percentage
International Universities	8	53%
Indian Universities	7	47%
Total	15	100

Table 2: Region-wise Representation of Total Respondents including Indian Universities

Region / Country of Universities	Number of Universities	Percentage (%)
Australia	1	7
Belgium	1	7
Hong Kong	1	7
Netherlands	2	13

United States	3	19
India	7	47

Total Respondents	15	100
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Table 3 : Predominant Characteristics of their Universities - International vs Indian Universities

Characteristics of University	n	International Universities N= 8				Indian Universities N= 7			
		Mean	sd	min	max	mean	sd	min	max
Innovative & progressive	15	4.0	0.8	3	5	4.86	0.4	4	5
Abundance of financial resources	15	3.12	1.1	1	4	3.43	1.2	2	5
Research output	15	4.12	1.4	1	5	4.57	0.5	4	5
Intellectual capital	15	4.38	0.7	3	5	4.43	0.5	4	5
Autonomy/ Academic freedom	15	4.12	0.8	3	5	4.86	0.4	4	5
Alumni Network	15	4.0	0.9	3	5	4.29	1.3	3	5
Highly technology driven	15	3.88	1.1	2	5	4.43	0.8	3	5
History & over 200 years of establishment	15	3	1.7	1	5	2.29	1.6	1	5

Diverse student body	15	4.12	1	3	5	4.29	0.8	3	5
Socially responsible	15	4.0	0.8	3	5	4.43	0.5	4	5
Industry connect	15	3.88	1.1	2	5	4.43	0.5	4	5
Others (if any) : International Universities' Remarks	Internationalization (4), International Partnerships and Collaborations (4)								
Others (if any) : Indian Universities' Remarks	-								

Table 4: Capabilities of Professors Based on Impact - International vs Indian Universities

Capabilities of Professors Based on Impact	n	International Universities				Indian Universities			
		Mean - Rank	sd	min	max	Mean - Rank	sd	min	max
Corporate Experience	14	4.4	1.8	2	7	5.6	1.5	3	7
Student Engagement	14	3.6	1.0	3	6	3.1	1.5	1	5
Mentoring	14	4.7	1.7	1	7	4.1	1.6	1	6

Communication Skills	1 4	4 . 7	1 . 4	2	6	4.9	1 . 5	3	7
Research Output	1 4	2 . 9	2 . 1	1	7	2.9	1 . 5	1	5
Academic Credentials	1 4	1 . 6	0 . 7	1	3	1.6	0 . 5	1	2
Administrative Ability	1 4	6 . 1	0 . 8	5	7	5.9	1 . 4	3	7

Table 5: Aspects in Developing Curriculum-International vs Indian Universities

		International Universities				Indian Universities			
Curriculum Development	n	M e a n	s d	m i n	max	m e a n	s d	m i n	max
Subject foundation	1 3	4 . 2 9	0 . 4 9	4	5	4 . 8 3	0 . 4 1	4	5
Relevance to current & future industry	1 4	4 . 2 9	0 . 7 6	3	5	5 . 0 0	0 . 0 0	5	5
Experiential learning	1 4	4 . 5 7	0 . 5 3	4	5	5 . 0 0	0 . 0 0	5	5

Student	1 4	4 . 2 9	1 . 2 5	2	5	5 . 0 0	0 . 0 0	5	5
Knowledge & skill req. of nation	1 4	3 . 2 9	0 . 7 6	2	4	4 . 4 3	0 . 7 9	3	5
Socio-economic req. of Society	1 4	3 . 5 7	0 . 5 3	3	4	4 . 4 3	0 . 7 9	3	5
Res. & Incubation	1 4	4 . 2 9	0 . 9 5	3	5	4 . 8 6	0 . 3 8	4	5
Govt. specified skill	1 4	3 . 4 3	1 . 1 3	2	5	4 . 4 3	0 . 7 9	3	5
Others (if any) : International Universities' Remarks	Engineering Experience Project Learning - (4); Work integrated learning (i.e. work experience opportunities) - (3).								
Others (if any) : Indian Universities' Remarks	Academic link with International Institutions and Globally Successful and leading Research Organizations and Laboratories; & Flexibility of the curriculum in terms of Choice Based Credit System, Outdoor Activity Based Courses.								

Table 6: Frequency of curriculum audit at university - International vs Indian universities

	International Universities	Indian Universities
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Curriculum Audits	n	(No of respondents marked)	(No of respondents tick marked)
Core Subjects	14		
Quarterly		0	0
Half-yearly		0	3
Annually		4	1
Biannual & above		1	1
As & when required		2	2
Electives	14		
Quarterly		0	0
Half-yearly		0	2
Annually		4	2
Biannual & above		1	1
As & when required		2	2

Table 7: Effectiveness of Teaching Approaches - International vs Indian Universities

Teaching Approaches	n	International Universities				Indian Universities			
		Mean	sd	min	max	Mean	sd	min	max
Conventional classroom (Low Tech)	14	3.86	0.69	3	5	4.29	1.11	2	5
Kinesthetic (Low Tech)	14	3.29	1.70	1	5	2.86	1.07	1	4

Differentiated Instr.(Low Tech)	1 4	3. 00	1. 00	2	5	3.2 9	0.4 9	3	4
Inquiry-based (HighTech)	1 4	4. 14	0. 90	3	5	4.1 4	0.6 9	3	5
Expeditionary (HighTech)	1 4	3. 71	1. 25	2	5	4.0 0	0.8 2	3	5
Personalized (High Tech)	1 3	3. 14	1. 46	1	5	3.6 7	1.0 3	2	5
Game-based (High Tech)	1 4	3. 29	0. 95	2	5	3.7 1	0.7 6	3	5
Others (if any) : International Universities' Remarks	Team Work; Group work/cooperative learning (3) ; The mentioned learning methods do not have similar impact in all disciplines. It is difficult to make universal interpretation. Also, the effectiveness of these methods are also dependent on the level of education, say UG, PG, Research, etc.								
Others (if any) : Indian Universities' Remarks	-								

Table 8: Student Performance Evaluation Methods - International vs Indian Universities

Student Performance Evaluation Methods (in %)	n	International Universities				Indian Universities			
		Mea n %	s d	m i n %	m a x %	Mea n %	s d	m i n %	m a x %

Diagnostic - (Mind maps, short quizzes, student interviews, student reflections, graphic organisers, classroom discussions)	1 3	1 5	9 . 1	5	3 0	12	8 . 2	0	20
Formative - (Portfolios, Group projects, Progress reports, Class discussions, Entry and exit tickets, Short, regular quizzes, Virtual classroom tools)	1 3	2 6	9 . 3	1 5	4 0	23	1 4 . 8	5	40
Summative - (Examinations, Recording a podcast, Writing a script for a short play, Producing an independent study project)	1 2	2 7	1 1 . 1	1 0	4 0	32	1 9 . 2	1 0	60
Ipsative - (compares previous results with a second try, Portfolios, A two-stage testing process, Project based learning activities)	1 2	1 1	2 . 4	1 0	1 5	24	2 2 . 2	5	60

Norm-refer.- (Test based on national standards, adjusted for age, ethnicity or other demographics, IQ tests, college admissions tests)	8	9	4 . 2	5	1 5	15	1 3 . 2	5	30
Criterion-refer. - (compare the score of an individual student to a learning standard and performance level, professional licensing exams, University exit exams)	1 0	1 1	1 0 . 2	0	3 0	12	7 . 6	5	20
Others (if any) : International Universities' Remarks	Respondent 1 - (20 %) , Respondent 8- (5 %)								
Others (if any) : Indian Universities' Remarks	Respondent 3 - (20 %) , Respondent 6- (10 %) , & Respondent 6- (5 %)								

Table 9: Percentage of Theory & Practice for Course Delivery - International vs Indian Universities

Theory to Practice for Course Deliver	n	International Universities				Indian Universities			
		Me an	s d	mi n	m a x	Me an	sd	min	max
Core Papers - Theory (%)	1 4	0.5 3	0 .	0.4 5	0. 7	0.6 2	0. 16	0.40	0.8

			0 9		0				
Core Papers – Practice (%)	1 4	0.4 7	0 . 0 9	0.3 0	0. 5 5	0.3 8	0. 18	0.20	0.7
Non-Core Papers/ Electives –Theory (%)	1 4	0.5 1	0 . 1 2	0.3 0	0. 6 5	0.5 9	0. 15	0.40	0.8
Non-Core Papers/ Electives -Practice (%)	1 4	0.4 9	0 . 1 2	0.3 5	0. 7 0	0.3 6	0. 15	0.20	0.6
Languages - Theory (%)	1 3	0.4 2	0 . 2 0	0.0 0	0. 6 0	0.5 8	0. 25	0.05	0.8
Languages - Practice (%)	1 3	0.5 8	0 . 2 5	0.0 0	0. 7 0	0.4 2	0. 21	0.00	0.5
Co-curricular - Theory (%)	1 2	0.4 4	0 . 1 0	0.3 0	0. 5 0	0.1 3	0. 12	0.00	0.3
Co-curricular - Practice (%)	1 2	0.5 6	0 . 1 0	0.5 0	0. 7 0	0.7 0	0. 35	0.10	1.0
Extra- curricular - Theory (%)	1 2	0.2 6	0 . 2	0.0 0	0. 5 0	0.0 6	0. 09	0.00	0.2

			2						
Extra- curricular - Practice (%)	1 2	0.7 4	0 .2 2	0.5 0	1. 0 0	0.7 8	0. 39	0.10	1.0
Sports - Theory (%)	1 2	0.1 6	0 .2 3	0.0 0	0. 5 0	0.0 3	0. 04	0.00	0.1
Sports - Practice (%)	1 2	0.6 9	0 .3 8	0.0 0	1. 0 0	0.8 2	0. 35	0.20	1.0

Table 10: Percentage of Academic Freedom for Professors - International vs Indian Universities

% of Academic Freedom	n	International Universities				Indian Universities			
		Me an %	s d	m in %	m ax %	Me an %	s d	m in %	ma x %
Core Papers	1 4	81	1 6	6 0	10 0	71	2 9	3 0	10 0
Non-Core Papers/	1 4	86	1 0	7 5	10 0	73	2 9	2 0	10 0
Languages	1 3	79	2 0	5 0	10 0	67	3 0	2 0	10 0
Co- curricularActivities	1 3	86	1 6	5 0	10 0	87	2 6	3 0	10 0
ExtracurricularActi vities	1 3	88	1 7	5 0	10 0	87	2 6	3 0	10 0

Sports	13	78	36	0	100	88	26	30	100
Others (if any) : International Universities' Remarks	There are no university level prescriptions. In general Professors have academic freedom and are mostly guided by the program requirements.								
Others (if any) : Indian Universities' Remarks	-								

Table 11: Techniques to Motivate Research Productivity of Professors - International vs Indian Universities

Techniques to Motivate Research Productivity of Professors	n	International Universities				Indian Universities			
		Mean	sd	min	max	Mean	sd	min	max
Personal enrichment programs	14	37.1	0.5	2	5	38.6	0.9	30	5
Set intermittent goals	14	35.7	0.9	3	5	41.4	0.9	30	5
Celebrate milestones	14	40.0	1.0	2	5	44.3	0.9	30	5
Mentorship	14	32.2	1.38	1	5	38.8	0.6	30	5

		9				6	9		
Comfort & inspiring workspace	1 4	3 . 8 6	1. 4 6	2	5	4 . 8 6	0 . 3 8	4 . 0	5
Share profits	1 4	3 . 1 4	0. 9 0	2	4	4 . 1 4	0 . 6 9	3 . 0	5
Performance based benefits	1 4	3 . 5 7	1. 1 3	2	5	4 . 2 9	0 . 7 6	3 . 0	5
Incentive program	1 4	3 . 5 7	0. 5 3	3	4	3 . 8 6	0 . 9 0	3 . 0	5
Performance appraisal	1 4	4 . 4 3	0. 7 9	3	5	4 . 1 4	0 . 9 0	3 . 0	5
Others (if any) : International Universities' Remarks	-								
Others (if any) : Indian Universities' Remarks	-								

Findings, Conclusion & Suggestions

The purpose of this study is to provide a comparative overview of teaching, learning, and research practises at international and Indian higher education institutions. The objective was to comprehend the technique used, the framework developed in this area, and the manner in which the procedure was carried out. With reference to the total number of respondents, 15 samples were drawn from the top 5% of world-class colleges worldwide, representing various

regions/countries. India is represented by 47%, the Netherlands by 13%, the United States by 20%, and Australia, Belgium, and Hong Kong each by 7%. This geographic diversity of respondents enables the study to collect a broader range of academicians' opinions, best practises, and thought processes for this research work.

Predominant Characteristics of a WCU: From the above shared table-3, it is evident that 100% of international university respondents agree that intellectual capital is the most predominant characteristic of their universities. The least standard deviation of 0.7 for intellectual capital also indicated that most of the respondents agreed with the same opinion with the least number of disagreements. While 100% of Indian university respondents expressed that having autonomy/academic freedom and being innovative and progressive are the most predominant characteristics of their universities, Furthermore, on average, "intellectual capital" is marked as the 1st most predominant characteristic by international universities. While Indian universities ranked it as one of the four most important features of their institutions,

Teaching, Learning & Research Practices: The essential capabilities of professors, action steps for establishing a vibrant and innovative learning environment, critical aspects of curriculum development, frequency of curriculum review, effective teaching approaches, effective evaluation methods, course delivery, and academic freedom for professors are all analysed. When compared to universities in other countries, it is clear that Indian universities fall short in a number of important areas (teaching, research, citation, industry income, and world vision).

Action Steps for Creating an Innovative Learning Environment: It is clear that the majority of international university respondents stated through their responses to the open-ended question that the critical action steps for creating a vibrant and innovative learning environment at their institutions include the following: engaging a broader audience to contribute and create; having an open mind, an international attitude, and the ability to operate in a team; increasing emphasis on expanding students' flexibility, increasing their employability, and strengthening collaborations between students, teachers, researchers, and industry; Configure pedagogies, assessment, and learning environments in such a way that they promote active and collaborative learning. Extend online and digitised distribution to give students the freedom to engage in learning in a way that fits their unique circumstances. Creating innovation centres on campus where industry partners can interact with the university community and developing novel pedagogical approaches that provide students with additional opportunities to collaborate with top researchers and build translational networks. This increases students' opportunities to increase their employability. Developing students as partners and increasing chances for students to participate in work-integrated learning and research partnerships, while priority is given to faculty with strong research capabilities and intellectual talents.

While the Indian university respondents confirmed that a thriving and innovative environment requires the recruitment of faculty with exceptional academic and research credentials, top-quality students, and state-of-the-art academic infrastructure, Curriculum revision and the

incorporation of research findings into the syllabus promote academic freedom and innovative academics by promoting applied and pure research as well as post-doctoral work, which are major works at international institutes but not major works in Indian institutes, as evidenced by the study's findings.

Aspects of Curriculum Development: In terms of the syllabus, it is clear that experiential learning is the most critical component of curriculum development at both foreign and Indian universities. Both groups responded almost identically to questions about curricular development. According to foreign universities, the greatest divergence in opinion occurs when it comes to student participation. Almost 100% of Indian university respondents acknowledged that the most critical factors to examine are student involvement, experiential learning, and curriculum creation that is relevant to present and future industry needs. Furthermore, one international university noted "Core Subjects: Continuous improvements directed by accreditation cycles for specific disciplines and comments from academic advisers." Extracurricular activities and sports are typically not included in the formulation of programs, according to the data. While an Indian university said that "every semester, faculty members may offer new courses or courses that are changed to meet the needs of today's students."

Frequency of Curriculum Audits: While overseas universities (almost 50% of respondents) indicate that they perform annual curriculum audits for core disciplines, only one in seven Indian universities (about 10%) indicated that they perform annual curriculum audits. Additionally, three out of seven Indian institutes (almost 50% of respondents) acknowledged that their audits are conducted biannually. Additionally, foreign institutions (almost 50% of respondents) acknowledge that they perform annual curriculum audits for non-core disciplines. While only two out of seven Indian institutes (about 25%) indicated that they perform annual curriculum audits, Additionally, two out of every seven Indian institutes (almost 25% of respondents) acknowledged that their audits are conducted biannually, compared to a nil percentage of international universities. The majority of international universities agreed that they would conduct annual or biannual curriculum audits for essential disciplines. Furthermore, 42 percent of international universities reported that their institutions conduct annual audits of co-curricular and extra-curricular activities. While none of India's universities affirmed the same (0%). In addition, 57% of international colleges say that audits are done when extracurricular activities need to be checked.

Effectiveness of Teaching Approaches: While international universities responded that an inquiry-based approach to teaching is the most successful method for them, Indian universities indicated that the traditional classroom teaching method is the most effective. However, there is a major deviation in opinion among Indian universities over conventional approaches. It is worth noting that while overseas institutions assess kinesthetics as fairly effective, Indian universities rate them as the least effective across all categories. Additionally, an international university respondent said that teamwork, group work, and cooperative (joint) learning are all moderately beneficial. They stated, "The aforementioned learning strategies do not have the same impact across all fields." The success of these strategies depends on the level of education, such as undergraduate, graduate, or research. Both groups (international and

Indian) agreed that the summative approach is the most frequently utilised method for evaluating student performance at their universities, accounting for 27% of all evaluations, respectively. While the norm-reference technique is the least frequently used method in international universities (9 percent of overall assessment methods), diagnostic (12 percent) and criteria-reference (12 percent) methods are the least frequently used in Indian institutions. Furthermore, two of these international universities use alternative methods of student evaluation (accounting for 12.5 percent of total evaluation methods on average). In addition, Indian universities said that three of these schools use other ways to evaluate students, which on average account for 11.6 percent of all evaluation methods.

Student Performance Evaluation Methods: When it comes to student performance evaluations, international universities employ formative assessment methods for 26% of their entire assessments, while Indian universities use the same method for only 19% of their total assessments. Second, although worldwide universities reported an average of 11% for ipsative evaluation methodologies, Indian universities reported nearly double that figure, at 20%. Additionally, the average of summative and formative evaluation methods is 53%, nearly half of all evaluation methods used to evaluate students at foreign universities. While Indian institutions reported a rate of only 46%, or less than half, for the same. International universities observe the least variation (2.4) in responses when using ipsatic approaches. However, Indian universities observe the biggest variation (22.2) of replies for the same. It is noteworthy that international universities devote almost 49–58 percent of their teaching time to core papers, non-core papers, and languages, whereas Indian universities devote just about 38–42 percent of their time to the same. Additionally, the results indicated that both groups indicated less academic freedom for academics when it came to core publications versus non-core papers. Additionally, the international university respondent who said that their teachers enjoy complete academic freedom also stated that their university lacks any university-level prescription for academic delivery independence. The majority of the time, professors are directed by the program's requirements and specifications. While it is apparent that international universities grant their professors almost 10% more academic freedom than Indian universities do for core papers, non-core papers, and languages, it is also evident that international universities grant their professors nearly 10% more academic freedom. Simultaneously, international institutions and Indian universities have a nearly identical range of academic freedom for co-curricular and extracurricular activities, i.e., 86-88 percent of academic freedom in programme delivery. However, overseas institutes grant their coaches nearly 10% less academic freedom than Indian universities. This is also feasible, given one of the international respondents does not engage in strenuous physical activity.

Critical Aspects of Research Policy: When it comes to research, the critical aspects that are analysed are the aspects of their university's research policy, critical procedural implementations in developing a research-driven university, strategies used to attract research grants from external and internal sources to strengthen their research culture, and techniques for increased research productivity. It is clear that the critical aspects of research policy that have had an enduring impact on international university respondents are the inclusion of fundamental science and innovative technologies in their research; the establishment of a

centralised approach to funding and management of critical research infrastructure in order to improve its planning and maintenance; and the prioritisation of strategic funds for new collaborative research infrastructure that provides the broadest possible access to knowledge. It's interesting to note that one of the world's leading institutes is not research-oriented but is among the greatest performers. It is evident from the responses of Indian universities that the majority of them expressed autonomy in the research area: having excellent infrastructure and institutional support to manage sponsored research and consultancy projects; attracting top researchers and scholars; facilitating dissemination of information about schemes, awards, and fellowships; and establishing a planning and monitoring committee to evaluate the progress of funded projects. However, it is noted that aspects such as universities' remaining a driving force for regional economies, establishing a centralised approach for research funding and infrastructure management, and providing open access to research facilities across the entire campus are not mentioned by Indian university respondents.

Critical Procedural Implementations Required to Develop a Research-driven University: It is evident that the most critical procedural implementations required to develop a research-driven university are inspiring innovation, encouraging applied research, theoretical research, and inter-disciplinary research collaboration; pursuing strategic and high-quality international collaborations in research and education; actively encouraging researchers to collaborate with industry, government, and the community; and developing a research-driven university. Indian institutions' answers also show that they follow almost the same steps to build a research-intensive university.

Strategies to Attract Research Grants: According to the majority of international university respondents, the strategies used to attract research grants from external and internal sources to strengthen universities' research cultures are as follows: effective grant writing; linking PhD student recruitment to faculty members' grants to achieve a synergistic effect on research activities; and encouraging faculty members to bid for large-scale collaborative and theme-based research externally funded grants. One university respondent remarked intriguingly that uncovering undiscovered riddles, tackling issues, and pioneering new technologies-all in the service of the world-has boosted their research performance and recognition in their field. However, it is noted that the precise procedures for obtaining research funding from external sources are not entirely publicised. According to Indian university respondents, multidisciplinary research; addressing the needs and socioeconomic requirements of society in research proposals; encouraging faculty to apply for multiple grants; establishing a research directorate to educate the public and share information about grant opportunities; establishing a grant office to assist grant applicants; encouraging new faculty to use seed funds; developing an innovation incubator that is supported; continually recognising and rewarding faculty who contribute to innovation, knowledge development, societal concerns, and the techniques employed by universities to attract external and internal research funding

Indian Education: The Next Step

How can the Indian Higher Education Institute develop a viable strategic plan to become globally competitive in teaching, learning, and research areas? While there is no clear path

forward for disrupting higher education at the moment, there are numerous pain points that folks in the education profession and outside could address. To begin with, there is still a substantial mismatch between what people desire and what is accessible. Additionally, a sizeable number of future professions will be difficult to foresee, except that they will demand a very different set of abilities than those possessed by the majority of graduates. Students are paying an increasing amount for an ever-decreasing amount, with student debt reaching all-time highs. Numerous prestigious colleges are stressing research over teaching. Much of higher education's existing model needs to change. In today's digital-first society, we must teach each generation how to rapidly learn, unlearn, and relearn so they can shape the future of work rather than be shaped by it.

While each institute has its own methodology based on the vision that it has set, a strategic intervention and framework can be developed to be more competitive and put them on the global map. Some strategic interventions include:

1. **Teaching should lead to Employment:** Employers require abilities in addition to knowledge and titles. The industrialised world is undergoing a record-breaking job surge. There has never been a more favourable period in history to find work; this should undoubtedly be celebrated. However, there is still a major mismatch between the jobs desired and the employment offered. Certain professions require a different skill level than job seekers offer, which explains why 60% of firms struggle to locate competent candidates. While the number of college graduates continues to grow, there is widespread scepticism about how university degrees translate to the workplace, with an increasing percentage of employers voicing worries about graduates' job preparedness and ability to immediately contribute value to the workplace. Additionally, it is obvious that a significant number of people end up in occupations that are not even related to their degree.
2. **Research should address in solving pressing issues in society:** Anyone who has spent time in academia is aware that institutions' quality, at least as measured by research excellence tables, is mostly determined by research rather than teaching. Teaching can be viewed as a diversion from writing and obtaining research grants at many prestigious schools. Not only are top faculty members drawn by larger remuneration, but also by increased autonomy and a lighter teaching load. In exchange, they will publish prolifically and generate grant revenue while delegating teaching to graduate students. And the journals in which they publish their findings have a dubious economic model: they are controlled by profitable publishing conglomerates that generate billions of dollars in revenue. Indian higher education should look at this as a competitive advantage and, across the nation, should develop research competency.
3. **Learning modes should generate curiosity and creativity skills:** The learning models teach more thinking, curiosity, and understanding of real-time problems. The learning objectives have to be more forward-looking and deep dive into making society more economic and growth-oriented. While the current scenario has involved a rapid pedagogical shift from traditional to online class sessions, personal to virtual instruction,

and seminars to webinars, in the days to come, the system will undergo a radical technological transformation, bringing accelerated digitalisation to the worldwide higher education system. India should be ready for all this. Disruptive effects make it possible for Indian universities to think about and change their educational offerings in response to this new environment, but they also make it hard for them to change.

The overall observation in the present study signifies the importance of teaching, learning, and research areas' contributions in building a world-class institute. While each country and each institute has its own agendas and methodologies for academic programmes in developing and managing the teaching community, in order to match global standards, the policies are to be in line with the global requirements. There is always a room to learn from each other's experiences, and one can benchmark the best practise to be in the global league.

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