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## A STUDY ON CHALLENGES AND BEST PRACTICES IN ACADEMIA- INDUSTRY INTERFACE OF INDIA

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**Abstract:** This study has been undertaken to examine the objectives, challenges and benefits of industry- academia interface. The dynamic forces operating within the industry-research institution interface are analysed in this paper. The goal of this research paper is to outline what is the importance of industry- academia interface, popular ways of tying up industry- academia interface through the efforts of Educational Institutions and through the efforts of companies and finally the view of Corporate Managers that the Indian academia is not up to the standards of Industry level and the view of Management Teachers differs with the view of Corporate Managers.

Globalisation of business scenario has created knowledge economy. In order to face current and future global challenges in business and industry, a country needs strong knowledge foundation. And therefore, education of youth is of paramount importance today. Industries don't just need educated manpower but they need smart, practical, skilled workforce that can survive and compete in the complicated global market. This paper has covered the importance, objectives of academia and industry collaboration, challenges facing India in Academia and industry collaboration compared to other developed countries of the world. It attempts to highlight the best practices that India needs to implement in order to achieve its growth and also underlines current practices that are already being implemented.

**Keywords:** academia – industry, interface, collaboration, globalisation,

### INTRODUCTION:

Constant progress / change in the way business operations are conducted globally and its relative effect on industrial environment locally has put demands on the development of knowledge economy. Two important pillars of knowledge economy are Academia and Industry where Academia plays the role to nurture fresh and energetic talent and new concepts / ideas. Industry has the role to monetize / commercialize new concepts utilizing skills of fresh new talent. Economic growth of a nation can be boosted with appropriate and effective co-ordination between Academia and Industry.

Young population of a nation is of paramount importance in this scenario. Availability of young population, their education, their vocational skill levels, the environment provided for them to become industrious (education, opportunities to sharpen / enhance / utilize their skills and knowledge, employment opportunities, etc.) provides major support to a nation's growth.

Academia must be responsible enough to strive for a continuous feedback from the Industry and vice versa Industry must clearly communicate their requirements and expectations to the Academia. Need of the hour is for both these pillars to work with a larger vision of nation's growth in a global scenario and close the gap amongst themselves interactively and collaboratively.

In India about 66% of the workforce has equivalent to the eighth-grade education. Only approximately one in fifty workers have any kind of formal vocational training. In Indian economy, high skill, high productivity sector that produces goods and services for rich, tech-savvy, urban consumers and low cost, low productivity sector that is for poor. India is missing a middle- the midway jobs, the mid- skilled workers, Chandrasekharan, Roopa (2019).

## ACADEMIA- INDUSTRY INTERFACE

*"Academic world is creative and industry has the job of commercialization of different thoughts and ideas. There is a need of productive interface between academia and industry, which is very limited in the world" -Bisaria Gaurav (2011).*

For a long time, India suffered from lethargy where academic institutions made little or no effort to understand industry's manpower requirements and industrial growth was almost entirely dependent on entrepreneurial skills of a few individuals. Active collaborative stimulant between the two was almost entirely missing and India suffered as a nation on industrial front.

In 1991, conditional bail out of \$500 million to Indian government by World Bank and IMF forced the liberalisation of economic policies of India. This event changed the Indian economy and made it more market and service oriented. As China started becoming manufacturing hub of the world, India started its journey to become service capital of the world.

Soon, academia realised that graduates produced by their traditional courses had little or no employability skills in this new scenario. Either the syllabi of courses were aged or it wasn't being delivered in the manner effective for the new age industrial requirement.

A big example is the BPO (Business Process Outsourcing) industry of India. Although almost two decades old now, it still has a potential to provide employment for millions and has a simple requirement: excellent skill in Spoken English. English as a language is being taught in Indian academic institutes since ages but even today they ignore the spoken part of the same and quality of knowledge imparted. As a result, the BPO industry has to invest huge money, resources and time to train and re-train young talent for entry level jobs. This highlights the gap between academia and the industry.

Efforts are being made to close this gap but the scope is still restricted to information technology or management schools. Percentage of such collaboration is also not satisfactory. But now India has realized that to satisfy essential demands of global and open market it is necessary to take collaboration between Academia and Industry to higher level and spread this awareness among stakeholders of these two pillars.

Industries must realize their tremendous gain in usage of knowledge base that exists in academia to reduce costs, improve quality and increase their global competitive opportunities. This can also wipe off their dependence on foreign countries for knowledge and costs incurred for in-house research and development.

And therefore, it is required to study Indian Academia – Industry Interface to know where we are lacking? and what we can do to make this collaboration stronger to face global challenges? Hence in present study the attempt is made to highlight these issues.

### IMPORTANCE OF ACADEMIA- INDUSTRY INTERFACE:

1. Rapid globalization brings the world closer and closer but at the same time it creates complexity in the business world. And therefore, now it is a need to bring changes in academia of the nation to cope up with the coming challenges of modern world, Sodi (2017)
2. India has good quantity in number of young workforces, but the quality of this young workforce has to improve by developing at least basic abilities and skills relevant to the industry.
3. Young fresh graduates from academia are the input as employees to industries. But it is always found that industries have to train and re-train these freshers to mould them as per the requirements of their job demands. It is time, resource and money consuming process.
4. The world changes rapidly. Market turns on its head in a span of a year or two but compared to that academia does not keep pace. Some universities are teaching outdated syllabus to their students which are of no relevance for the industries. It is a need to modify the syllabus of the universities frequently as per the need of industries, which are main acceptors of academia graduates.
5. Number of students going abroad for higher education from India has increased four times in last 14 years. This is a sad indication that students realize value of higher and industry specific education but academia in India has failed to address this requirement either in value, quality or reach by global standards.

### CHALLENGES FOR ACADEMIA:

Academia must get their priorities right. In chronological order, they are expected to work on following:

1. Basic education: 100% improvement in quality and many times increase in spread is required.
2. Advanced / Higher education: Must be competitive with global standards and must include inputs from Industry.
3. Fundamental R&D: Encourage more participation from students and teachers.
4. Industry specific R&D: Target impact areas like new age management, fin-tech, energy, communication, health, food, etc with active participation from industry.

Traditional structure of Academia – Industry interface is as follows:

1. Industrial visit
2. Field visit
3. Guest lectures by Industrial experts.
4. Seminars, Workshops for students with collaboration of a relevant industry.

Apart from the above traditional academia- industry interface now there is a need to move further, to think at elaborative vision and more involvement of industries in academia. Such as:

1. Involvement of industry in the framing of syllabus, curriculum of courses followed by joint certification and resulting in at least an internship opportunity.
2. Faculty development program by industries to teachers and professors with at least a part of it being conducted at actual shop floor.
3. Involvement of students in the industries complex projects, sharing of ideas.
4. Industry Financer role in providing funds to students in start-ups and working as venture capital provider and guidance.
5. Encouraging students for research and supporting them by fellowships of industry.
5. Marketing: Communicate academia's strength to the industry.
6. Core Strength: Build critical mass of experts.

7. Infrastructure: Provide adequate technical and other infrastructure for R&D to thrive.
6. Administration: Reduce / Remove restrictive administrative policies that may discourage academicians to interact with industry.
7. Provide incubation for Start-ups.

#### CHALLENGES FOR INDUSTRY:

1. Get skilled, trained and motivated manpower
2. Reduce costs (infrastructure, manpower, manufacturing, product development, R&D)
3. Improve quality on continuous basis.
4. Continued education for its workforce (technical, behavioural, managerial)
5. Get globally competitive.
6. Bad experience from earlier academia partnership.
7. Confidentiality of product / service structure and technology while interacting with Academia.

#### REVIEW OF LITERATURE:

Sodi (2017), focuses on the need of development of skills and abilities of youngsters of India to get and perform desired jobs. His study is based on three perspective tiers of academia, industry and students and teachers as stakeholders in understanding the challenges and need of bridging the gap between academia and industry.

Paula (2015), in his study highlighted state, universities and companies as central players in the collaboration of academia and industry. He also discussed different factors which compel this process of innovation and also identified barriers in collaboration, which will be helpful to find solutions to overcome these hurdles in the process of collaborations. His study is based on the case study of Portugal's major highway management concessionaire. He described in this study the importance of establishment of coordination mechanism such as Communication routines and matrices to observe collaborative behaviour in addition to the need to achieve global goals and to support their partners in collaborations.

Bisaria Gaurav (2011), stated in his study that the collaboration of academia and industry depends on the organizational and management characteristics of partners involved in the cooperative process. The research is based on the students and teachers of management colleges or universities and the corporate managers of Lucknow U.P. through which he describes the importance of industry – academia interface. He also suggested popular ways in tying up industry – academia interface through the efforts of Educational Institutions and through the efforts of corporators. He also stated that in India the view of corporate managers and view of management teachers are different. And at the end he concluded that Indian academia is not up to the standards of industry level.

Davin Gann (2018), has suggested 3 ways in his study for successful collaboration in universities and industries. He suggested start-ups, research work, funding from government, brain- drain of students on projects, flexibility in collaboration process may bring university and industry interface at productive level.

Priya Saini and Dubey S. (2017), in their study tried to examine various issues related to academic institutions and industry collaborations on the basis of nature of resources and abilities of stakeholders in the knowledge management. They also suggested certain policies and strategies to introduce such collaborations to boost the economic growth. They also identified potential areas where industry's partnership with academia would be more fruitful. As share of India in research and development of GDP is just 2% compared to USA which is 32% of GDP. China has 300 research parks and MIT has 700 companies working with its faculties on different projects.

#### OBJECTIVES OF THE STUDY:

1. To understand the concept of Academia – Industry interface.
2. To identify challenges in the collaborations of academia and industry in India.
3. To identify the best practices to use in collaboration of academia and industry of India.
4. To evaluate the performance of India with other countries.

#### RESEARCH METHODOLOGY:

In order to study the academia- industry interface of India, survey method was followed. The study is based on secondary data. The data was collected from books, journals, newspapers, and websites. The data collected were tabulated and analysed with the help of statistical tools. The conclusions were drawn on the basis of data analysis.

#### SIGNIFICANCE OF THE STUDY:

This study will help to understand the importance of relationship of academia and industry for India as a growing economy. And also, will help different academia and industries to implement best practices in bringing these two major domains in a productive manner for facing the challenges of the global world.

#### LIMITATIONS OF THE STUDY:

The study is based on Secondary data collected from articles of newspapers, books, and websites. In the study the focus is given mainly on India and selected top countries of the world.

**CURRENT UNEMPLOYMENT SCENARIO IN INDIA**

Table 1: Unemployment rate in India

Education Level	Unemployment Rate
Diploma	37%
Degree	36%
Post Graduation	36%

(Source-Report by Kotak Institutional Equities)

The above table shows that an unemployment rate is higher (37%) in students having diploma followed by degree holders and post graduate students (36%) each in India.

**Excerpts from report by Centre for Monitoring Indian Economy (CMIE)**

- Nearly half of India's 1.3 billion population is below the age of 25
- Rate of unemployment among qualified youth (those with bachelor degree or higher) in India has seen a sharp increase from mid-2017.
- People who have completed a bachelor's degree or any other higher level of education account for only 10% of working age population in India.
- While over 100 million had a bachelor's degree or higher as of 2018 nearly 53 million of those were unemployed.
- The agriculture sector employs the most people in India, accounting for 44% of all jobs.
- Graduate+ women face a punishing 35 per cent unemployment rate.

This report from CMIE highlights that although the government is actively taking education to masses reaching far and wide geography of India, it is the academic institutes that are failing to provide education that is relevant to current requirements of the industry. This leads to a sad picture showing more unemployment rate for more educated.

The report also highlights in some way, gender discrimination against women in getting meaningfully employed in the industry. Although, available data is not enough in order to substantiate this finding.

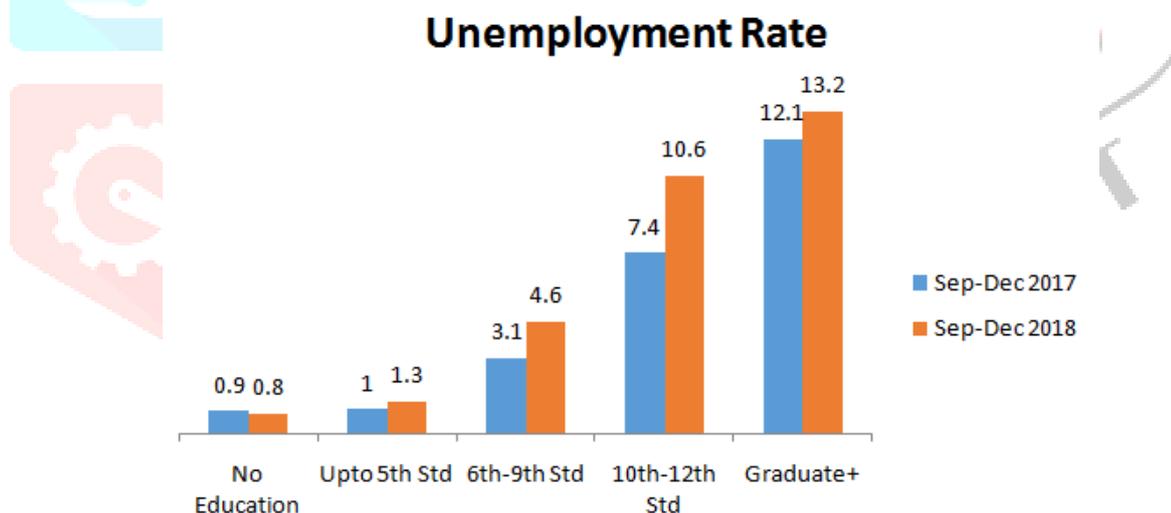


Figure 1: (Source: CMIE)

**INDIA'S SPEND ON EDUCATION (% OF GDP)**

Table 2: India's spend on education (% of GDP)

Country	% spend on education	Latest data available
India	3.8	2014
India	4.6	2019
United States	5	2014
Germany	4.8	2016
Japan	3.6	2014
United Kingdom	5.5	2016

(Source- World Bank)

Data available from world bank suggests that India was lagging behind considerably at 3.8% when compared to developed nations like United States, Germany, United Kingdom when it comes total spend on education as percentage of GDP.

This expenditure has grown to 4.6% of GDP by 2019 and the HRD Minister has stated that India aims to increase this expenditure to 6% of GDP.

### INDIA'S RANK ON BEING GLOBALLY COMPETITIVE NATION

The Global Competitiveness Index (GCI) compares and ranks the economic competitiveness of nations (138 nations, 2016-17 edition) based on the statistical data collected from internationally recognized agencies like IMF, UNESCO, World Bank, International Telecommunication Union (ITU) and WHO.

Following are India's rankings against some of the parameters of GCI:

Table 3: India's rankings against some of the parameters of GCI

Indicator	Global Ranking of India		
	2014-15	2015-16	2016-17
University-Industry Collaboration in R&D	50	50	24
Latest technical knowledge	110	108	78
Innovation Capacity	48	50	39
Patents filed, Application/million population	61	61	64
Quality of Scientific Research Institutions	52	45	36
Country Capacity to Retain Talent	42	40	32
Local Availability of Specialized Training Services	64	68	55
Quality of Education System	45	43	29
Quality of Math & Science Education	67	63	44
Quality of Management Schools	56	55	43

(<https://cpr.puchd.ac.in/wp-content/uploads/2017/05/Industry-Academia-RD-Ecosystem-in-India.pdf>)



Figure 2: Global Ranking of India

As the above rankings suggest, India has come a long way since liberalization of economic policies in 1991, and making progress by leaps and bounds. Difference in rankings from 2014-15 to 2016-17 itself suggest that India is making fast progress.

But it still needs greater impetus and more efforts in order to compete against some of its neighbours like China, Japan, Singapore, etc.

Some of the indicators above also suggest that Academia and Industry in India have very important role to play in making India globally competitive. Both of them have work in collaboration, be interactive and support each other.

Collaboration in the area of research and development is especially important where academia is the donor of knowledge and industry is the receiver. Research conducted in academia can help industries reduce their costs, improve quality of existing products / services and conceive new product / service development.

#### TOP 5 COUNTRIES WHERE INDIAN STUDENTS PREFERRED TO PURSUE EDUCATION IN THE WORLD.

Table 4: Top 5 countries where Indian students preferred to pursue education in the world

Country Name	No of Indian students (July 2018)	% of Indian student's preference
USA	2,11,703	28.13
Canada	1,24,000	16.47
Australia	87,115	11.57
Saudi Arabia (Kingdom of)	70,800	9.41
United Arab Emirates	50,000	6.64
Other	2,09,107	27.78
<b>TOTAL</b>	<b>7,52,725</b>	<b>100</b>

(Source: Indian Ministry of External Affairs, 2018)

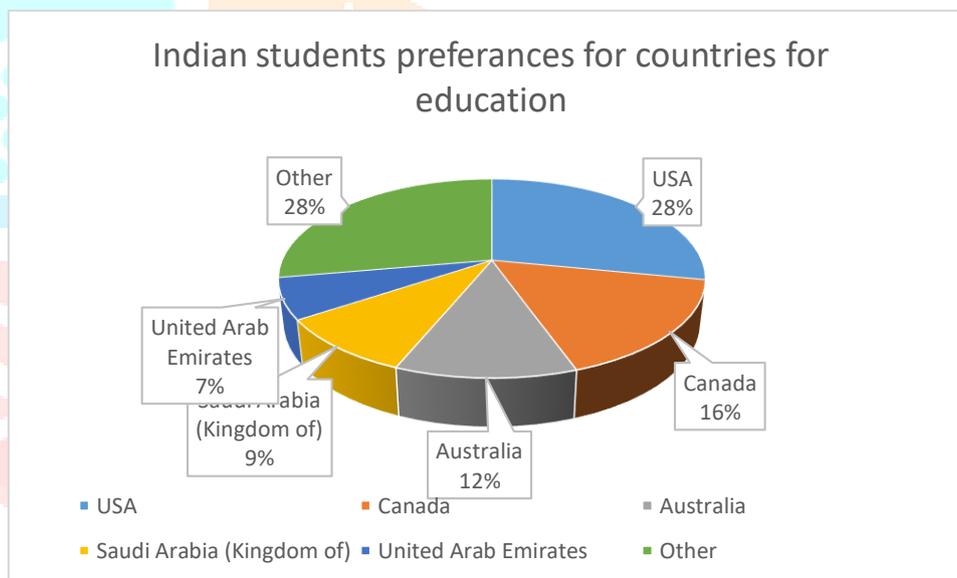


Figure 3: Indian students' preferences of countries for education

From the above diagram and table, it shows that, out of 7,52,725 Indian students going foreign countries 2,11,703 (28%) students preferred USA for higher study, followed by Canada 1,24,000 (16%), Australia 87,115 (12%), Saudi Arabia 70,800 (9%) and United Arab Emirates 50,000 (6%).

#### REASONS OF SELECTING THESE COUNTRIES BY INDIAN STUDENTS: (WITH REFERENCE TO STUDY PORTALS MASTERS)

##### USA:

- Provider of top education
- Access of numerous scholarships
- Worldwide recognition of qualification

##### Canada:

- English speaking country
- High quality of life
- Cosmopolitan environment

##### Australia:

- Safe country
- Multicultural and Friendly environment

- Opportunities for work during studies

#### **Saudi Arabia (Kingdom of): (top universities.com)**

- Opportunities to stay and work
- Universities are growing rapidly
- Cost of living low
- Various funding incentives and scholarships

#### **United Arab Emirates:**

- Safe learning environment
- Benefit from excellent educational facilities

### **CURRENT INITIATIVES FROM INDUSTRY FOR ACADEMIA-INDUSTRY INTERFACE:**

Today's business understanding of local as well as global market is important for business leaders. Leaders should know how to tackle with the global uncertainties like demonetization, COVID 19 which have impact on not only global market but directly – indirectly on local markets. And therefore, it is needed for Academia like B- schools to prepare students with such uncertainties. It is essential to academia to give practical exposure to their students and train them. Excellence is no more desirable quality but it has become survival strategy, Dr. Ashok Modak (2020). According to him Excellence is becoming an indispensable factor in today's business leadership; academia in India is restructuring its curricula to programme its potential talent, skill pool to be leaders.

While academia may be still catching up to the reality of academia-industry interface, many industries have dedicated huge resources (time and manpower) and funds towards developing and then attracting trained, skilled manpower.

This is limited to participation by large corporations and middle level down to SMEs haven't taken much interest till date or may be data about the same is still not visible.

- **ICICI** has its Faculty Development Programme (**FDP**) that provides inputs on course content, familiarity to varied teaching methodologies, exposure to a live banking environment through visits to branches and processing centres and a window for interaction with business leaders. The workshops also afford opportunities for the faculty to draw lesson plans to teach back. (<http://www.learningmatrixatcampus.co.in/>)

- **Infosys** has launched **Campus Connect**, an industry – academia partnership initiative.
- **Larsen & Toubro** runs various initiatives like 'Science on Wheels' vans, **STEM** (Science, Technology, Engineering and Math), 'L&Teers', etc. through which they support Industry-Academia interface. Number of beneficiaries in 2019 alone were 2,42,984
- **TCS** has developed Academic Interface Programme (**AIP**) to foster collaboration, learning and training in institutes of higher education.
- MOU between **NASSCOM&UGC**.
- **HDFC** bank recently announced its plan to partner 50 technology companies and business schools to tap emerging fintech ideas starting with IIT-Bombay and IIT-Roorkee as part of its industry-academia partnership effort.
- The Ministry of Human Resource and Development (**MHRD**) also increased funding to **IIT- Madras** by nearly Rs 300 crore (\$47 million) to encourage innovation and strengthen industry-academia ties.
- India Electronics and Semiconductor Association (**IESA**), the trade body representing the Indian **ESDM** (Electronic System Design and Manufacturing) industry, signed four MOUs with **IIT-Kharagpur** to build a robust talent pipeline in the **ESDM** space.

### **CONCLUSION:**

- Youth must have access to high quality education. Population of India is very large and 50% of this population is below the age of 25. Compared to this large number; availability of good universities, colleges, institutions in India is low. Due to this, there is a great competition for getting an admission in high ranking institutions. Either students can get admissions on the basis of merit (sometimes as high as 98%) or on cast / quota basis. Students who are not part of any of these categories prefer going abroad for further study.
- High demand from students and low availability of good quality institutions leads to brain drain from India. It is need of the hour to not only increase number of institutions but also to improve quality and relevance of education offered by them to prevent brain drain from India.
- To face global challenges, it is essential for India to do SWOT analysis of its academia-industry interface. It is now a necessity for the Universities and Industry not to walk in the same direction of growth and development on different path separately, but to collaborate with each other and work together for the benefit of the nation.
- The government of India has to make changes in their education policies by providing more importance for such collaborations, scholarships, funding, and exemption from taxation for industries that actively participate in such initiatives.
- There is a need for easily accessible, effective and active framework / platform for Industry-Academia collaborative research. Academia needs to cultivate patent creation and filing culture.
- India has strong demand in vital services and supply of human capital. Industry must take initiative to communicate market requirements clearly to the academia. Academia must be more responsive in aligning their syllabus and quality of knowledge delivery to requirements communicated by Industry.

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