# CIF HIGHER EDUCATION FORUM INDIA 2019

New Delhi & Gandhinagar

CANADA INDIA FOUNDATION

*Democracies Working Together*

# CIF HIGHER EDUCATION FORUM INDIA 2019

New Delhi & Gandhinagar

JANUARY 17, 2019
IN COLLABORATION WITH **PHD CHAMBER OF COMMERCE & INDUSTRY & SENECA COLLEGE**

JANUARY 18, 2019
IN COLLABORATION WITH **GOVERNMENT OF GUJARAT'S DEPARTMENT OF EDUCATION & PANDIT DEENDAYAL PETROLEUM UNIVERSITY**

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Report compiled by
Mayank Bhatt, Executive Director, Canada India Foundation

# ABOUT CIF

Canada India Foundation (CIF) is Canada's premier national, not for profit, nonpartisan, non-governmental public policy advocacy group established with the objectives of fostering stronger bilateral relations between Canada and India and enhancing the participation by Indo-Canadians in the Canadian public affairs.

Since 2007, CIF has played a pivotal role in transforming Canada's relations with India by emphasizing India's criticality to Canada's future. CIF has assisted in shaping a definitive pro-India policy framework in Canada by working with decision makers in the federal and provincial Canadian governments. CIF members are among Canada's top industrialists, entrepreneurs, corporate executives, and professionals, and are key influencers of Canadian public policy enjoying tremendous pelf and prestige in Canada.

Annually, the CIF recognizes and honors a prominent achiever who has championed the transformation of economies, including those who have enhanced India's presence and prestige on the world stage. The annual award recognizes excellence and includes $50,000.00, given to a charity of the award recipient's choice.

In addition, it organizes periodic Canada-India themed forums that focus on sectors of cooperation. Past forums include Energy (2009), Mining and Metals (2010), Agriculture and Food Processing (2012), Infrastructure (2014) and Healthcare (2015 and 2017), and Higher Education (2018).

**Anil Shah**
Chair

**Satish Thakkar**
National Convener

**Pankaj Dave**
Co - Convener

**Rupesh Kapadia**
Treasurer

**Vijay Sastry**
Secretary

**Mayur Dave**
Chair
Higher Education
Committee

# EXECUTIVE SUMMARY

Canada India Foundation organized a Higher Education Forum in India in January 2019. The need to organize the forum in India was felt during the forum that was held in July 2018 in Canada.

The agenda at the Canada program included connecting government and institutions in both the countries, linkages between educational institutions and industry and to focus on the intake of international students with the purpose to match their qualifications and skills with the programs they enroll into in Canadian institutions.

The Foundation collaborated with PHD Chamber of Commerce and Industry in New Delhi and the Government of Gujarat's Department of Education and the Pandit Deendayal Petroleum University in Gandhinagar.

As during the 2018 Forum, Toronto's Seneca College was CIF's main partner for the forum in 2019 in India, too, and contributed to all the key elements of the forum to ensure its success.

In New Delhi, the Forum comprised two panel discussions on Education and Skills Development, and International Best Practices of Academia Corporate Interface in Research and Innovation. For the first panel discussion, the panelists focused on the need to reskills especially at a time when technological innovation in manufacturing is changing the economic landscape leading to job losses. For the second panel discussion, the panelists focused on the need to develop curriculum focused on innovation to bring about consonance between education and market requirements in the near future.

In Gandhinagar, the Forum comprised two panel discussions on Internationalization of Education, and Opportunities for Cooperation Between Indian and Foreign Universities. For the first panel discussion, the panelists focused on the growing globalization in of education sector. The trend not only involves students, but increasingly, also faculty – both academic and non-academic as well as tie-ups between educational institutions. The second panel discussion focused upon the necessity of developing robust linkages between Indian and global universities and make the collaboration need based.

Two stalwarts of the academic world in North America – Mr. David Agnew (Seneca) from Canada and Mr. Mark Keller (Stanford) from the United States delivered the keynote address in New Delhi and Gandhinagar respectively. In both the seminars there was a sizeable representation from government and industry sectors.

This White Paper on Higher Education concludes with a set of Recommendations which focus on the efficacious ways in which Canada and India may collaborate to bring about the much-needed transformation in the education sector in Canada.

**Mayur Dave**
Chair - Higher Education Committee

In January 2019, CIF organized the Indian-edition of Higher Education Forum in New Delhi and in Gujarat. With nearly 150,000 international students of Indian origin coming to Canada in 2018 to pursue higher education, the business of education has acquired a tremendous significance and has emerged as one of the key components of the Canada – India bilateral relations. While estimates vary, it would be reasonable to quantify the annual spend by Indian students in the range of $20billion.

This Forum was set with vision to reshape higher education with emphasis on innovation and to create opportunities for development and growth between Canada and India. It was produced in collaboration with the leading educational institutions from Canada and India.

In the 2018 Higher Education Forum held in Brampton Canada had three objectives:

- Connect governments in Canada and India that are instrumental in policy formulations
- Connect institution-to-institution linkages
- Explore the role of the industry in Canada to absorb the Indian students into jobs after the completion of their educational process

One of the highlights of the white paper published subsequently was the need to focus on the recruitment of international students from India into Canadian institutions to ensure that students are enrolled into the right program and in the right educational institutions. This would ensure that their qualification from the Canadian institution of higher learning would result in immediate career opportunities and they would not have to languish in minimum wage jobs post qualification.

The Indian edition of the Forum again focused on

- Connect governments in Canada and India that are instrumental in policy formulations
- Connect institution-to-institution linkages

For the Indian edition, the third objective was to focus on the intake of international students with the purpose to match their qualifications and skills with the programs they enroll into in Canadian institutions.

Our partners in organizing the 2019 CIF Higher Education Forum – India included Toronto's Seneca College, PHD Chamber of Commerce, New Delhi, the Government of Gujarat's Department of Education, and the Gandhinagar-based Pandit Deendayal Petroleum University (PDPU).

# PROGRAM

## 17 January 2019

New Delhi
PHD House

### 1st session

### Education and Skills Development

Keynote Address by David Agnew,
Seneca College

Introductory remarks by Pankaj Dave,
Co-Convener, Canada India Foundation

Welcome remarks by Dr. Jatinder Singh

Director, PHD Chamber of Commerce

**Panel discussion**
Moderator
David Agnew
Seneca College

**Panelists**

Jitendra Das
FORE School of Management

Ajay Mohan Goel
Consultant, INSCOL Healthcare Pvt. Ltd

KS Gopinath Narayan
National Institute of Financial Management

Neeta Bali
G D Goenka World School Gurugram

## 18 January 2019

Gandhinagar
Pandit Deendayal Petroleum University,

### 1st session

### Internationalization of Education

Keynote Address by Michael Keller,
Stanford University

Introductory remarks by Anju Sharma
Principal Secretary, Ministry of Education

Special address by Bhupendrasinh Chudasma
Ministry of Education, Government of Gujarat

**Panel discussion**
Chair
Sudhir Jain
IIT – Gandhinagar

Moderator
Himanshu Pandya
Gujarat University

**Panelists**

David Agnew
President, Seneca College

Pankaj Pankaj
University of Edinburgh

Ramaswamy Nagarajan
UMASS, Lowell

Seneca

PHD CHAMBER

PDPU

Education Department
Government of Gujarat

CANADA INDIA FOUNDATION
Democracies Working Together

PROGRAM

## 2nd Session

### International Best Practices of Academia Corporate Interface in Research and Innovation

Introductory remarks by Nishant Berlia
Chair, Education Committee
PHD Chamber of Commerce & Industry

Special remarks by Rubina Mittal
Co-Chair, Education Committee
PHD Chamber of Commerce & Industry

**Panel discussion**

Moderator

Nirav Bhatt

Aastha Law

**Panelists**

H Purshottam
National Research Development Corporation

Bibhu Biswal
University of Delhi

Nivedita Das Kundu
York University

Anita Lal
FORE School of Management

Satish Modh
VES Institute of Management Studies and Research

## 2nd Session

### Opportunities for Cooperation Between Indian and Foreign Universities

Chair
Shirish Kulkarni
Sardar Patel University

Moderator
Rajul Gajjar
Vishwakarma Government Engineering College

**Panel discussion**

Moderator

Nirav Bhatt

Aastha Law

**Panelists**

Paul Jensen
LeBow College of Business, Drexel University

Jack Hawkins Jr
Troy University

Liesl Folks
University of Buffalo
State University of New York

Nivedita Das Kundu
York University

Seneca

PHD CHAMBER

PDPU

Education Department
Government of Gujarat

CANADA INDIA FOUNDATION
Democracies Working Together

# HIGHER EDUCATION FORUM INDIA 2019

New Delhi

## 17 January 2019

PHD Chamber of Commerce

- Education and Skills Development
- International Best Practices of Academia Corporate Interface in Research and Innovation

## Keynote address

**David Agnew**
President, Seneca College, Toronto

Skills development and tomorrow's jobs: How higher education can help

I am honoured to be in such illustrious company and can't wait to yield the floor to hear from the distinguished panel that follows these few remarks. We are indeed privileged to have the opportunity to benefit from their insights and perspectives, and I look forward to their contributions to the discussion about skills development and education.

In fact, in the best tradition of education, we can all learn much from each other, and so I congratulate the organizers for bringing together such a broad and influential group today. In the audience we have educators, government representatives, business people, recruiters and, importantly, students. All of you have much to add to this important conversation.

Now, before I share with you a few thoughts that I hope will be an appropriate setup to the panel that follows immediately, I first want to pay tribute to the Canada India Foundation for its tireless work to build even stronger bonds between our two great countries. I can think of no stronger or more enduring bridge than education, a universal good that we know is the single most important determinant of individual, community and national well-being.

I learned early in my career in international development that as soon as you get the basics of health taken care of — access to vaccines, antibiotics, clean water — what makes the difference is education. And while it should hardly need to be said in 2019, education for girls and boys.

For the last nearly 10 years, I have been privileged to lead Seneca College, where I have been exposed to the world of postsecondary education and come to appreciate even more its vital role in building and sustaining strong economies and strong societies.

And while that has always been the case, in the broad sweep of history there have been two developments in the last few decades that have changed, and are still changing, the root and branch of what we call tertiary education.

The first is the massification of higher education … in other words, the ongoing broadening of access to colleges and universities around the world for hundreds of millions of students who, in years past, could not have hoped to continue their education beyond high school or, in some cases, even earlier.

In Canada we have one of the highest rates

of postsecondary attainment on the globe, and it is thanks to farsighted governments that invested in the career- and professional-focused college system to supplement the traditional research-based universities.

In other countries, such as here in India, we see both a huge range of public and private institutions expanding to absorb an increasing number of high school graduates and a growing population that is newly prosperous enough to afford to send their children to higher education, both at home and abroad.

The second development is, of course, technology in all its aspects and impacts. Technology is changing how students learn, where students learn, what students learn and, yes, why students learn. It fuels a not-so-quiet revolution that is creating both great challenges and amazing opportunities for the existing higher education infrastructure and institutions.

If those are the two major drivers of change, it would be an incomplete picture if I were not to mention a third major influence on the shape and future of postsecondary education, demographics.

In Canada, and in large swaths of the world, the feeder population for postsecondary education is shrinking, putting pressure on governments and institutions to find new models of sustainability.

Think of the US, Korea, Russia ... countries where colleges and universities are searching – in some cases desperately – for ways to remain relevant, or even just to remain open as the number of domestic students shrinks.

On the other hand, Asia and Africa will continue to see growth, with the resultant demands on their education systems to create new campuses and student spaces.

Here's just one statistic that tells that story: By 2030, there will be more 20- to 24-year-olds in Nigeria than in the US and Canada combined. India will continue to grow, although the growth curve is, I understand, leveling off.

All of which leads to another strong current in education: internationalization. The same factors of 1) huge growth in demand for post-secondary education, 2) technology and 3) demographic change have spurred a huge movement of students across borders to study.

At Seneca, for instance, we have seen exponential growth in demand from around the world, led by India, to study at our campuses. But it's not just about international students ... it's about academic partnerships between institutions and faculty, sharing of knowledge and practice, exposing students of all ages to a global experience and perspective. And by all accounts, the internationalization of education will only continue to deepen.

But as much as demographic change is being felt differently in various counties, where I am struck by the convergence of the challenges facing all of us in higher education is the changing nature of work, and the role of our institutions in preparing our students for their careers.

We are having this conversation in India, but we could be in just about any country and the talk would be the same ... the impact of Industry 4.0, artificial intelligence and machine learning, the demand for graduates imbued with a spirit of innovation and entrepreneurship ... these are common themes the world over.

And when it comes to the employer community, I find that wherever I go in the world the discussion is remarkably similar – the demand for a highly skilled workforce is growing, and getting the right talent is becoming a major issue.

In a recent survey, in my home province of Ontario, four out of five businesses identified finding and retaining the right talent as their top priority – and that's with one of the

highest rates of postsecondary attainment in the world, where those enterprises should presumably be awash in highly skilled graduates.

It is interesting to go back more than half a century ago and look at why institutions like Seneca were established.

Our provincial government saw a huge gap between those graduating with the theoretical teachings of universities and those who did not progress to postsecondary education ... high school education was not enough in the new world of automation. What was needed was a highly skilled workforce.

It was the dawn of the knowledge economy as we prepared to shift into the post-industrial phase of our growth. The discussion turned to the role of higher education in meeting directly the demands of the technology-infused economy that was emerging.

From our very beginning, we at Seneca insisted that our role in that evolving economy was providing an education — not simply training — for two reasons:

First was that breadth would provide the edge to our graduates when it came to the job market; Equally important is that part of our responsibility is to prepare our students to be active citizens in the world, with a global perspective. Those could not be provided by rote training but needed to engage students at a more sophisticated level.

It is somewhat ironic that 50 years later societies and economies around the world are having virtually the same discussion ... automation that is reshaping the landscape of the labour market and will force huge swaths of the workforce to retool their skill set.

But the truth is that the knowledge economy is upon us and has been for some time.

It is why we at Seneca are relentlessly focused on career-based and professional education, providing work-integrated learning opportunities for most of our students. It is what we were put on the earth to do, and it is our responsibility to provide that kind of post-secondary experience to our students, domestic and international.

So as the swirl of change sweeps through industry after industry, sector after sector, there are three areas of intense activity at polytechnics, institutes of technology, applied universities — whatever they are called in different jurisdictions — that we see as fundamental to meet the ever-changing needs of students and the economy.

Those three are programs, approach and delivery, and I will talk very briefly about each from a Seneca perspective.

The first is Programs ...

In response to rapid change in the type of skills needed in the workplace, we're working hard to shorten the program development cycle, and working with government to clear out the cobwebs in the approvals process.

We try to keep an ear to the ground and an eye on the horizon in program development, including drawing on the expertise in our program advisory committees, the many faculty we draw from industry and our employer partners.

Some recent examples of new and coming-soon programs are graduate certificates focusing on FinTech and CyberSecurity, degrees in Data Science and Analytics, Interactive Media and Software Engineering, a new advanced diploma centred on mechatronics.

The second area is our Approach to teaching and learning.

Some years ago, we adopted a more rigorous cross-disciplinary approach to our pedagogy and curriculum.

That was in response to the call from employers for talent that is both comfortable today working across professions and that tomorrow will be eager to acquire new skills outside their current career focus.

It has led to our bringing together several disciplines under one roof in our new Centre for Innovation, Technology and Entrepreneurship where students and faculty can take advantage of our new entrepreneurship centre, applied research programs and innovation garage.

Our approach also responds to the call for graduates who can think critically, solve problems, work well in teams and be prepared to change. The hard skills are assumed; it's those soft skills that make the difference.

The third and final area is the Delivery of our programs.

We continue to expand our online, compressed and executive model offerings as we strive to flexibly meet students where they are rather than asking them to fit into the traditional full-time postsecondary model. And that is particularly relevant for our more mature, mid-career students.

One of the new frontiers in higher education is the world of so-called micro credentials, shorter and more focused programs at both the undergraduate and graduate level, catering to specific skill areas in high demand fields yet remaining academically rigorous and credible.

In conclusion, I spoke earlier of the assembled talent in the room and let me speak directly to those in industry and business about how you can help build stronger futures for our students. And let me focus particularly on our international students coming from India.

First, let us know what you need: the specific skills you're looking for and how we can meet your talent deficits.

Second, we need you to open your doors to our co-op students, to our students in programs that offer internships and placement opportunities — and of course our graduates. Work-integrated learning is a vital part of making education relevant to our students, and ultimately to their employers.

Third, we need your engagement – as curriculum and program advisors, mentors to our young entrepreneurs, applied research partners — you have so much to offer our students.

This is an exciting time in higher education, a time of great challenge and opportunity.

We will do well if we continue to remind ourselves that at the end of the day, we measure our success by the success of our students. And for their success, all of us need to work together.

Thank you very much.

**Pankaj Dave**
Co-Convener, Canada India Foundation, Toronto

In his brief introductory remarks, Mr. Dave said the following are the broad objectives of the Higher Education Forum

- Connect governments in Canada and India that are instrumental in policy formulations
- Connect institution-to-institution linkages
- Explore the role of the industry in Canada to absorb the Indian students into jobs after the completion of their educational process

The two sessions today pertaining to Education and Skills Development in the morning and International Best Practices of Academia and Corporate Interface in Research and Innovation in the afternoon will take us closer to attaining our objectives.

**Jatinder Singh**
Director
PHD Chamber of Commerce, New Delhi

In his remarks, Dr. Singh said, in the educational sphere, PHDCCI has signed MoUs with 38 academic institutions across India and some of them have come from far-flung areas to participate in today's session.

When we examine the education and skills development interlinkage, we must take cognizance of leap frogging of technologies in India. As Indian economic growth has not followed the classical developmental pattern, there has been an overlap of technologies.

This phenomenon has led to a disconnect between academia and the industry, and we see that the equation has become supply driven instead of demand driven. The number of skilled personnel is not being produced by the educational system in adequate numbers.

This is because in India, R&D is linked to industry and the missing link is commercialization and innovation. However, the rapidly changing manufacturing environment will change. Industry 4.0 will usher in a new era and will comprehensively change the eco system of manufacturing.

The fear that new technology will lead to job losses may be rooted, but it ignores the fact that new jobs will also be created. In fact, throughout history, change in technology has always resulted in job creation as well as job losses.

India will emerge as skills capital and resources of the world when you combine the demographic dividend that India will enjoy in the next two decades along with the transformation of technologies in manufacturing,

# PANEL DISCUSSION

The impact of technological innovation has transformed education from its pure theoretical underpinnings to an application-based acquisition of knowledge and skills.

The emphasis has shifted to creativity, critical thinking, problem solving and decision making. It is also about communication and collaboration where technology paves the way for new ways of working.

Educational institutions are being required to provides skills enhancement programs to students that need to be fitted into a new industrial and service industry environment that lays more emphasis on skills.

The need for skills development has leapfrogged exponentially across the globe, leading to collaborations between educational institutions on a global scale.

In the panel discussion, panelists will share their thoughts on the future of work and what efforts they are doing in skilling the leaders of today and tomorrow, leveraging new and emerging technology in their respective institutions.

## Participants

## Moderator

- David Agnew, President, Seneca College

## Panelists:

- Jitendra Das, Director, FORE School of Management
- Ajay Mohan Goel Consultant, INSCOL Healthcare Pvt. Ltd
- KS Gopinath Narayan, IA & AS, Professor, National Institute of Financial Management
- Neeta Bali Director, and Head of School G D Goenka World School, Gurugram

Neeta Bali spoke about G D Goneka's two educational systems – the International Baccalaureate and the Cambridge systems. She said the school has adopted Approaches to Learning (ATL) which focus on developing skills in collaboration, communications, researching, problem solving and teaches concepts such as organisational skills, mindfulness, self-motivation, perseverance, resilience, academic honesty, media literacy, critical thinking and transferability of skills.

Bali said teachers today are facilitators and there is no chalk and talk learning; in fact, nearly all of learning occurs outside of the class and the focus is increasingly on real life situations. Internship is a strong component of the program. Today's education is neither content heavy nor about grades, it's changed to what real life skills the students have

picked up. She said the responsibility for the educators is to give students the confidence to be non-judgmental.

Ajay Goel spoke about the consulting work that he performs for INSCOL. With over two decades of experience and expertise in healthcare services in India, INSCOL emerged as leader for providing best-in class medical services facilitated by highly qualified team of doctors and renowned specialists in India. Recognizing the need of skilled nursing professionals in medical facilities and hospitals across the globe, INSCOL laid the foundation of INSCOL Canada - A World of Opportunities to be a Global Nurse in 2013.

The prime objective of setting this initiative was to transform IEN (Internationally Educated Nurses) into global nurses so that they can be part of best medical facilities on global front. Within a short span it became an international hub for the Global Nurse Program catering to Middle East, South East Asia, and Africa in addition to India and Canada.

This is achieved through our partnership with 15 Universities & Colleges from Canada, UK, USA, Australia and New Zealand, offering more than 20 study programs for aspiring nursing students as well as working professionals willing to enhance their career overseas.

INSCOL provides these nurses a complete track path – right from what career they should undertake right up to their placement. It gets them ready to start performing from the day they land in Canada, technical side of nursing, foundational course to ensure that there is no learning disruption. INSCOL has two world class training centres in Chandigarh and Kochi.

Dr. Jitendra Das, FORE School, emphasised that the skills development component in a management school has different connotation and components as compared to the industrial and manufacturing sector. He said that we live in an age of information overflow and this factor determines the level and pace of skills development. The time it took a person from 1 century before common era to acquire a lifetime of information can today be gathered in half-a-day. As a teacher you must be aware of the needs of the student and the fact that the student has access to the same information.

Dr. Das also made an important distinction in the transformation process of data, information, knowledge and wisdom. Organised data is information. A set of

## PANEL DISCUSSION

information in a direction is knowledge. When you have the knowledge and you don't know the outcome, it takes you to the level of wisdom. Today, nearly all teaching has moved away from information and is going into the realm of wisdom. We need to focus is on wisdom level, because the first three stages are available to everyone. To stand out in a competitive situation pedagogy must move to the level of wisdom and deploy technology.

Gopinath Narayan is an Indian Audit & Accounts Service (IA&AS) officer of 1996 batch on deputation to National Institute of Financial Management. He said the National Institute of Financial Management (NIFM) is a Center of Excellence specializing in capacity building of professionals in the fields of Public Policy, Financial Management and other governance issues for promoting highest standards of professional competence and practice.

NIFM was set up in 1993 as a registered society under Ministry of Finance, Government of India. To begin with it was mandated to train the officers recruited by the Union Public Service Commission (UPSC) through the Civil Services Examination and allocated to the various services responsible for managing senior and top management posts dealing with accounts and finance in the Government of India. In due course of time NIFM has become a premier resource center to meet the training needs of Central Government for senior and middle level of management too. NIFM also caters to the State Governments, Defence establishments, Banks and other Financial Institutions.

Dr. S. K. Salwan, the Vice Chancellor of Punjab Technical University, Jalandhar (2003-2008) and the Founder Vice-Chancellor the Apeejay Stya University, in his presentation said that over the years, the skills required to do a job has exponentially increased. The manufacturing sector's needs from its employees have enhanced and skills education industry has realized that mere graduation is not adequate for job. Educational institutes have launched centres of excellence to meet this requirement.

Technology has galloped and teachers need to know about technology. Employers and employees both need to be aware of technological retraining and reskilling. After the formal presentations by the panelists, David Agnew moderated a brief Q&A about the role of the government in pushing this agenda.

# INTERNATIONAL BEST PRACTICES OF ACADEMIA CORPORATE INTERFACE IN RESEARCH AND INNOVATION

## Introductory remarks

**Nishant Berlia**
Chair, Education Committee, PHD Chamber of Commerce and Industry

Mr. Berlia in his inaugural presentation spoke about the present scenario in India. His presentation was based on the research report done by the Chamber and presented to the Indian Human Resources Development Ministry.

Berlia quoted Indian Prime Minister Narendra Modi's "A society that does not give importance to education cannot progress. Let there be any government, it must have a vision to make India shine in the field of education."

He said that enrolment into higher education programs is rising in India, while it is falling in OECD countries. Enrolment grew by 4.3 percent Compound Aggregate Growth Rate (CAGR). Total enrolments continued to increase in 2016-17, primarily due to increased demand for higher education in jobs and increased population in the age group of 18-23 years.

Mr. Berlia said the sector was going through a major shift from a college-model to a university model. The number of universities has grown 621 to 824 and over 40,000 colleges; and private sector is leading the growth.

However, he emphasized that the challenge India faces is in formal education, labour productivity and skills matching with tertiary education. Industry academia linkages – the relevant issue is how can we link higher education to industry's needs. This is what is a major cause of concern – in India the unemployment rate is not at all comfortable.

In research and development, the five eco systems that matter in Asia are China, Japan, Taiwan, Singapore, and India. Singapore and Taiwan are small countries and Japan is very advanced, so the real comparison and competition is between China and India and this comparison puts both on the same footing, we do similar sort of work. The only difference is in patent applications – even though in India we have a good patent regime, we are still way behind China, the commercialisation of technology is not mature in India, as it is in China.

The short-term challenge before the Indian economy is that jobs that require routine functional abilities are now being taken over by machines, and we must grow the economy at a much faster pace to create more jobs.

The notion of continuous upgrading of skills is becoming a norm. In the 1970s, the skills you acquired lasted you for two decades. Today, your skills are not relevant beyond five years. This has resulted, especially in the OECD countries, into the participation of age groups between 24-64 into formal and non-formal education; this phenomenon has yet to reach India; but there is an inherent requirement for upskilling in India as well.

## Special remarks

**Rubina Mittal**

Co-Chair, Education Committee, PHD Chamber of Commerce and Industry

Ms. Mittal in her remarks emphasized that although the PHD Chamber of Commerce and Industry has been conducting the academia-corporate interactions on innovation, the process is fraught with delays and requires persistent follow through. She illustrated her concern by an example.

A Delhi professor who had developed an enzyme that could cleanse pollutants from the water. We were keen to have this solution tested and implemented to cleanse the Ganga. PHDCCI introduced him to Uma Bharati, who was then the minister in charge of water resources. At that time, the project got entangled into bureaucratic maze but eventually by 2018-19, the project was implemented. "It took a lot of effort on our part as well as on part of the professor who had developed the enzyme to get the project implemented," Ms. Mittal said.

The point is that in India, nothing happens automatically. A lot of effort must be to be taken to implement things that bring about the desired change. Nothing happens on merit an organisation must take that extra effort to bring the product to ground.

In his remarks, VN Bansal, Co-Chair, PHD Chamber of Commerce and Industry observed that innovation can only be possible if there is a paradigm shift in thinking and approach of both the academia and industry. He cautioned that the culture must change in India about innovation and the process should be incremental.

# INTERNATIONAL BEST PRACTICES OF ACADEMIA CORPORATE INTERFACE IN RESEARCH AND INNOVATION

## PANEL DISCUSSION

Interface between Industry and Academia plays a central role in the growth and development of a nation. Industry not only provides employment opportunities for the educated and skilled products of education, it also engages in solving problems through research and innovation to improve the quality of new products and services.

In India, currently the engagement and collaboration between industry and academia is weak and incoherent. Collaboration between industry and academia is critical for innovation and technology transfer and for the promotion of entrepreneurship. The linkages can help to coordinate R&D and exploit synergies and complementarities of scientific and technological capabilities.

Today, India produces some of the most talented and intelligent workforce, but there is a huge mismatch between what is being taught in schools, colleges and universities vis à vis ASK (attitude, knowledge and skills) required by industry in new recruits.

Recent years have witnessed an increasing trend of foreign universities opening their campuses in India. Indian higher education institutions must adopt the globally relevant best practices to create a continuous stream of future student leaders.

Collaboration between industry and academia can make substantial improvement in research and innovation and ensure industrial relevance in academic research. Now organizations often look to academic collaborators for innovation.

Academia needs to make institutional mechanism to motivate the process of innovation and research. Collaborative accomplishment rests on mutual interest, achievable goal and rewards. Partnerships can bring together the collective creativity, expertise and resources of industry and academia.

Moderator

- Neerav Bhatt, Aastha Law Firm, Canada

Panelists

- H Purshottam CMD National Research Development Corporation (Ministry of Science and Technology)
- Bibhu Biswal, Cluster Innovation Centre, University of Delhi

# PANEL DISCUSSION

## Panel discussion

- Nivedita Das Kundu, York University
- Anita Lal, Fore School of Management
- Satish Modh, Director at VES Institute of Management Studies and Research

## Moderator

Nirav Bhatt

## Panelists

- H Purshottam, National Research Development Corporation
- Bibhu Biswal, University of Delhi
- Nivedita Das Kundu, York University
- Anita Lal, FORE School of Management
- Satish Modh, VES Institute of Management Studies & Research

H Purshottam in his presentation informed the participants about the National Research Development Corporation (Ministry of Science and Technology). NRDC was established in 1953 with the primary objective to convert lab scale technologies to commercial scale technologies. He said technologies are measured at their technology readiness level (TRL) and it has been observed that technologies emanating from the academic sphere are at TRL 2 or 3 and have no practical commercial application. These technologies require a lot of maturation. Maturation is scaling up the technology, prototype development, testing of the prototype in live conditions, preparing market research report. NRDC interacts with all the R&D labs, corporate R&D, and after identifying technologies that it feels can be turned into marketable products, it begins the process of commercialisation and identifying the gaps.

"After filling those gaps, we market them to small and medium enterprises in India and abroad," he said. Over the years, NIDC has transferred more than 5,000 technologies to start ups, MSMEs in India and abroad. It has also filed 1,800 patents. One service that NRDC offers to educational institutions is to assist them with patent filing. It files patents for free. "If you want to file and maintain a patent in India, it would cost you ₹400,000 to ₹500,000 and the same thing abroad will cost ₹1 million to ₹1.5 million. NRDC will do it free of cost for you," Dr. Purshottam said.

Bibhu Biswal, Cluster Innovation Centre, University of Delhi, said in 2011, the Government of India was keen on university – industry interface and a scheme was launched under which Cluster Innovation Centres were started. There were two types of such centres – the first was in academic institutions where they were to form clusters with institutions and industry, and the other was purely a cluster of industry.

"Eight years down the line, I have no hesitation in stating that we have completely failed. We didn't form a cluster with industry," Dr. Biswal said. He then spoke about the causes of the failure and the way the barriers may be overcome.

He said the collaboration between academia and industry works well in the advanced economies because they have established a mutually beneficial relationship. Industry funds the academia and academia provide industry with innovative products that have a commercial value. Unfortunately, this lucrative relationship is missing in the Indian context. There are three components to the relationship between the industry and the academia – students, faculty and administration and their interests must be aligned in the long-term.

"I have observed that students are keen to have links with the industry. In 2013, Mitacs asked for solutions from our students, one of them was able to find a solution. Students want a gateway for industry," he said.

Nivedita Das Kundu, York University, spoke about the Indian community in Canada. She said the Indian community is strong and is doing well, they are respected for their education, their success and their hard work. Unfortunately, the impression of modern India globally is still mired in age-old prejudiced views. This creates a problem for a proper exchange in the educational sphere. Canadian students are not interested in coming to India despite funding opportunities available from Canadian and Ontario governments.

Huge number of students are coming to Canada from India, but there is a lack of synergy between their needs and expectations and their qualifications, also there is inadequate synergy between the programs in which they are enrolled and the jobs they want to do after completing their higher education.

We need to focus on how the gap should be reduced. There must be a provision so that the students can be introduced to the industry while they are doing the program and they can get opportunities to do internship and exposure to industry. Academia and

## PANEL DISCUSSION

industry need to close the gap so that there are enhanced synergies.

Anita Lal, Fore School of Management, said as the head of the Centre for Entrepreneurship at Fore School of Management, her focus of discussion would be research and innovation for MBA level students. To get the best for the students, there have been a lot of academia and industry tie ups. We are inviting the corporates and asking them what is it that they need. We want our students to be so trained that when they come out, you're ready to pick them up and hire them and heading the shop floor.

She said, "We have co-created many courses and projects with the industry. Over the years, these collaborations have helped our students to gain confidence and practical experience of the marketplace. But the question is: Is that enough?"

Explaining the role of the centre she heads, she said, "When our students come to us, they are a bit apprehensive about turning into entrepreneurs because they have paid upwards of ₹1.5 to ₹2.0 million. But our centre makes their passage to enterprise more conducive. This helps them to take the risk. We have noticed that many of our students after they take up their corporate jobs, after they have paid off their educational loans, decide to turn to enterprise because they realise that they know the business better. They do well."

But when one looks at innovation one realises that nothing much is taking place. "Why can't we have something that is transformative instead of just incremental. When we talk of the new initiatives by the Indian establishment to encourage IPR, why can't we do more in this sphere? Why should only China have a monopoly over Christmas lights. We have more festivals," she said.

Satish Modh, VES Institute of Management Studies and Research, emphasized that innovation will only become a reality if possible If we radically transform our education system. He said, all the private universities are going for service-oriented education and not manufacturing education. They are focused on readymade jobs. Look at medical sector, we want to build more medical colleges, but we don't have any provisions for paramedics. If you have one medical college, there should be at least 10 paramedic colleges around that medical college.

Dr. Modh explained that capital goods, infrastructure, heavy engineering, where real innovation is required, we have no educational systems to provide human resources for this. "We prefer to import these goods rather than plan for their manufacture here in India. On all our infrastructure projects, we will import from abroad and for the maintenance, it will require trained personnel from abroad. Unless the educators realize where are the jobs and educate students to dirty your hands."

# HIGHER EDUCATION FORUM INDIA 2019

Gandhinagar

## 18 January 2019

Pandit Deendayal Petroleum University

**International Universities Conclave**

- Internationalization of Higher Education
- Opportunities for Cooperation Between Indian and Foreign Universities

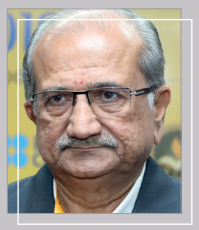
# Introductory remarks

**Anju Sharma**
Principal Secretary, Department of Education, Government of Gujarat

The purpose of this conclave is to bring universities here in India and abroad closer and to initiate a dialogue so that they can begin exploring the different ways in which they can work together. We have delegates from 26 universities from six countries. There are 51 delegates and the same number of representatives from different universities in India. The purpose is to move ahead in internationalization of education and globalization of education, making students of the universities global in education. Our basic purpose is to focus on three areas:

- Joint collaborative projects, including research
- Faculty and student exchange
- Dual degree collaboration

The benefits these collaborations serve is synergistic – what I have, I offer to you and what you have, I take from you, and together we complete each other. This process facilitates education. Education is no longer confined to the curriculum. It is acquiring a holistic experience, and holistic learning. And to achieve this, internationalization serves as an important milestone.



## Special remarks

**Bhupendrasinh Chudasma**
Minister for Education, Government of Gujarat

Education is the most powerful weapon that you can use to train the world. Internationalization continues to be on the agenda of higher education providers worldwide. It has significance for the sustainability of higher education at national level and subsequently the contribution that higher education makes to the development of a nation, its people and its ability to compete in the global market.

Education is integral to the economic wellbeing of the nation and it is enabled by liberalization of international trade. This has led to the presence of foreign universities or their campuses within host countries by technological development that has enabled cross-border or online course provision and by the growth of the knowledge society – a society that is focused on the dissemination of knowledge that improve the human condition.

One of the strategies is to create knowledge-based societies and in order to do so, we need to create an education hub for attracting students from neighboring countries such as Nepal, Sri Lanka, Bhutan, etc. On the lines of a few foreign nations, we should emerge as one of the largest players in the transnational educational market. India has had an illustrious history in the internationalization of higher education. The world's first university was established in Takshshila. The University of Nalanda had students and scholars from China, Indonesia, Korea, Japan, Turkey and other parts of the world.

India has multidisciplinary experience in the internationalization of education since many centuries. As our Prime Minister has rightly remarked that quality education should be our priority, along with literacy campaign, we have been focusing on the outlay, but now it time to focus upon our outcomes to benefit our entire systems.

Globally, over five million students are studying outside their home countries. In 2014-15, well over 2.5 million Indian students were studying abroad. In contrast, only 45,000 international students are studying in India. Given that India has unmatched richness and diversities of cultures and communities, the opportunities to attract students is large and almost completely untapped.

Education has to shine like the sun. The national higher education qualification framework in professional education must be aligned with global standards so that students receive internationally recognized qualifications. This internationalization must be achieved within the Indian context. The Gujarat Government's Ministry of Education is proposing to sign MoUs with different educational institutions across the world to ensure that the degrees provided by such institutions in India are recognized abroad.

With rising cost of education, English-speaking students could also find low-cost, high quality educational options in India. This market should be cultivated. The focus towards experiential learning are likely to be attractive. Inclusion of reputed alumni into the governance of the educational institutions can provide the requisite prestige and much-needed dynamism.

Openness to international academic ideas, international collaborations, and attentiveness to world university ranking can create an inherent appeal for Indian educational institutions to foreign students.

# Keynote address

**Michael Keller**
Vice Provost for Teaching and Learning, Stanford University

I have utilized the last few days to discuss with the Geo Institute Development Group on what it means to develop a world class university, a research university and how important a research program in an under graduate curriculum.

I want to give a perspective on international collaborations.

My frame of reference is of a person at Stanford University who is responsible for 750 staff, including academic staff, also in charge of something in the range of about $150 million, about 20 facilities and I cannot even begin to tell you of the number of programs.

I am also responsible for our reputation and responsible for allocation of assets including staff assets. I am responsible for developing partnerships and seeing that they go well.

The umbrella of stewardship poses some challenges to me. I measure collaborations of all kinds within the frame of these questions.

What would this relationship and the products of these collaborations would do for Stanford? And correspondingly, I expect the other side to be asking the same question. What would this relationship with Stanford do in practical terms for my institution?

This shared expectation of the production of value that drives our considerations of which collaborations to undertake, and which to set aside.

It's terribly important in the context of Stanford that we are not a top down institution, we are basically a collection of feudal kingdoms each with its own Duke or Earl. We work within a broad framework of Stanford, but we enjoy a lot of autonomy. We expect our professors to take initiatives, to be entrepreneurial, to be innovative, we are expected to take risks, we expect them to do research that is valuable not just for the research itself but also as a vital part of our culture and teaching.

This level of entitlement at the level of seven deans and seven vice provosts and a faculty of about 2,600 – all these are productively engaged to encourage research and development.

We must focus the discussion on the various types of collaborations and how productive they are, and whether by their nature they are challenging and whether they still provide opportunities. In my experience at Stanford, Yale, University of California – Berkeley and Cornell, all these heavyweight research institutes focus on one basis factor – one-to-one relationships, the personal relationships. This is how we make progress. This is how we decide to collaborate. This is how we decide whether something is going to highly valuable to us and to our students.

I encourage you, as you think about collaborations on an international scale, is to think about how you can engage people that you know and the people that you would like to know and to develop a personal relationship in your area of interest might or could match a complimentary area of interest in someone else.

It is intended for these institutions of higher education to provide unique opportunities and that is why you bring unique specialists who can give those skills to the students. The other aspects of this collaboration is to think of it in a business-like manner and focus on what sort of synergies might evolve

in the conduct of the collaboration itself and the development of new resources, new methods, new materials, and in regard to how we engage the students in the research processes. And this process should evolve into developing new alliances across institutional boundaries.

Collaborations always begin on a small scale and then evolve into many more institutions joining in. In my experience, what has worked the best is the collaborations between inter-disciplinary groups in different institutions, and this brings national-level organizations also into the collaborative effort. Even though the synergies in these groups are basically based on individuals, they then evolve into developing new collaborations in different spheres.

Stanford does not engage in institution to institution partnerships, partly because we are not a top down organization. Yes, we have a board of trustees, we have a fine president and a fine provost, but the institutions do not engage in partnerships because there are too many variables, too many possibilities and it is really simpler if we engage just at a people-to-people level. And at my level, where my responsibilities encompass both teaching and learning, the libraries and the university press, we prefer to collaborate internally only.

We expect our departments to be entrepreneurial, to be individualistic, to accept and define challenges. In addition to about 72 departments in about seven schools, we have centres, which are meant to be multidisciplinary, but they are all also provide Stanford the opportunity to bring people from the outside to engage in research and public policy debates and generally add yeast to the bread that the university is itself.

Now, I want to take you through some exceptions.

Since I arrived at Stanford in 1993, there have been a number of opportunities for me to assign assets that were under my control to get some big things done and in almost all cases they have involved the cases of communities of practice, often mixed sector communities. The first one that I created was a Stanford-based not-for-profit internet-based publishing venture called High Wire Press in 1995. In the first year, we had a dozen clients – all academic publishers who needed help with getting their journal into the internet form with great functionality on the web. Among them was Science magazine, the Journal of Neuro Science, the National Academy of Sciences and about eight others. That process was organic because we didn't do any marketing. Over the course of those initial years, we engaged with the publishers in debating what features, and functions should come to the publishing marketplace, and should be used to reinforce the utility of

these not-for-profit publishers.

Those conservations, those collaborations were wonderfully productive; we started with about 12 or 15 people around the table, but as things grew, we needed bigger and bigger space and the eventually this turned out to be a unique collaboration among publishers, librarians and a community of technologists. It worked out well. I had to spin out the company in order to get the freedom from the Stanford regulations to pay the high-end staff what they were worth. Stanford does not have stock options and I was competing with organizations that offered their staff stock options. I rolled it out and Stanford still wants a piece of it, but it's no longer with us. We have a lot of collaborations, we agree on what we will do together, we support it and we generally make all of it freely available to everyone.

Some lessons:

- Some sort of compatibility among the collaboration partners is important – maybe individuals, maybe institutions, but they have to share some kind of characteristics. Secondly, these players have to be ready to communicate with one another and be willing to meet one another; they have to have funding to meet one another, and as those meetings occur, these people get to become friends and colleagues. Personal relationships count a lot.
- Explicit and shared expectations – sometimes MoUs are important in these projects. Also, small projects lead to larger projects and these result in long-term and larger relationships. And the institutions that we have developed collaboratively have all taken this route that I just described.
- Predict what successful collaboration will look like, and one of those usually is wide utility, a functionality that others can use, and the other is content that is useful to a lot of other people.
- Finally, a multi-type collaboration is what we encourage. And while a cross-sector collaboration is difficult, those are the ones that really make a big difference. When people from the industry, from the academia, from public policy organizations come together, these collaborations become meaningful.

# PANEL DISCUSSION

## Panel discussion

- Welcome Remarks by Session Chairman: Sudhir Jain, Director, IIT - Gandhinagar
- Introduction by Session Moderator: Himanshu Pandya, Vice Chancellor, Gujarat University

## Panelists

- David Agnew, President, Seneca College
- Pankaj Pankaj, School of Bioengineering, University of Edinburgh
- Ramaswamy Nagarajan, Professor, UMASS, Lowell

### Sudhir Jain

We must keep in mind that what internationalization means to Europe or North America is not what it means to India. Internationalization of education is a decade-old phenomenon in India. At IIT Gandhinagar, which is a relatively new institution, we are constantly looking for building linkages with global institutions. We tend to build linkages with global educational institutions that are ahead of us and have both heritage and reputation. But we are also eager to build relations with institutions that are new and behind us.

The second aspect of internationalization is it introduces diversity in the campus. It also introduces cross-cultural interaction among the student body which is invaluable. We should also consider how representative are our institutions of the diversity within India both in terms of the students and the faculty.

### Himanshu Pandya

Today, almost all educational institutions of any size have an international component to its program. When that is the case, how is this panel discussion's topic different. I think the differentiator is if the institution is dynamic enough to change its curriculum, its deliverables, its projects to reflect a global perspective. A pertinent factor is that when a global institution plans to establish a base in India, it must understand the local milieu and the local requirement. These institutions need a local player. In India, we have reached a stage where private or public institutions don't matter. The Government of India is open to all collaborations.

Panelists

### David Agnew

If internationalization of education is evaluated from the number of international students, then Canada would be a runaway success, with over half-a-million international students studying in higher education institutions of Canada. The United States, which is then times the size of India, has a million international students and the United Kingdom has fewer international students than Canada.

The real story is the growth of international students in Canada. The number has doubled in the last five years. In Seneca, we have 30,000 students and of which 7,000 are international students from over 140 countries (4,000 are from India). The growth is

because of three reasons:

1. Quality of education – it is universally of high quality across Canada, whether in the University or in Colleges
2. Canada enjoys a sound reputation of being a tolerant and safe country and international students prefer to come to Canada because of they are accepted and where they feel safe
3. Progressive immigration system in Canada allows a student to become a permanent resident and eventually a citizen
4. There is also a deflection effect, where students prefer Canada because the immigration policies in many countries offering quality higher education are not conducive

However, the number of students pursuing higher education outside Canada is low – just 3%. Educational institutions in Canada are working with both federal and provincial governments to encourage outbound education.

The areas in which we need to be cautious include not allowing our governments to look upon internationalization of education as a revenue source and attracting billions of dollars every year. The definition of internationalization of education shouldn't be based on finance, it should be based on education. We also want to ensure that international students find proper jobs that reflect their programs.

**Pankaj Pankaj**

When we talk of internationalization of education, we mean three things – global mobility, global campus and global partnerships. Global mobility means that students anywhere should have some international experience while they are students. In recent times, this international experience has been extended to the faculty and administrative staff as well.

Global campus reflects composition. At the University of Edinburgh, we have about 34,000 students and 40% of these are international students. The question is whether such a large percentage of international students ensure diversity? The answer is clearly no. Unfortunately, the UK government has not been as progressive with international student recruitment as the Canadian government has been. We had a two-year post study work visa, but that no longer available. In addition, global campus also means a global faculty and administration staff.

Global partnerships mean having partnerships across the world. We have partnerships with institutions in North America, China, South East Asia. The University of Edinburgh has regional offices across the world. Strong collaborations with over 100 organisations in India. These partnerships acquire meaning when the basis of collaboration is tangible, and research based.

**Ramaswamy Nagarajan**

What we can do in terms of synergistic opportunities that arise because of internationalization of education. We should strive to cohesively bring about synergies between western pedagogy and eastern ways of learning. In the Indian system, there is no distinction between devotion and learning. If we go back four or five decades or even a century, we realise that the Gurukul style of departing education involved devotion and experiential learning. But over the years, the experiential part has lost its importance and it has been reduced to teacher telling students what to do.

In the Indian systems we believe that when intelligence matures it becomes wisdom and when wisdom integrates with life, it becomes bhakti. For us, knowledge and devotion go together. The western style of learning is more hands-on, more experiential. The western culture encourages thinking out of the box. Each system has its own advantages.

These days, educators have become educators without borders. When we teach courses online the geographic boundaries don't matter. Now, we can bring different cultures and ways of learning together.

The challenges about globalization of education is that enrolment issues are taking new dimensions. The economy is doing well, so that people get jobs faster and don't have to go to university. The population in the western countries is gradually decreasing and this will bring the enrolment down.

There is going to be tremendous pressure on universities across Europe, North America and South America to recruit students from other parts of the world – especially Africa and Asia. Globalization of education will become necessary for survival.

Online education also raises opportunities for internationalization of education. This format also has challenges. It is still at a nascent stage and will develop in different ways and in different directions.

**Sudhir Jain**

We heard a speaker each from the United States, the United Kingdom, and Canada and all of them had different perspectives to the subject of panel discussion. It is important that India, too, develops its own perspective on the subject based on the its own experiences and needs. There is no standard approach for internationalization of education.

# PANEL DISCUSSION

**Chair** – Shirish Kulkarni, Vice Chancellor, Sardar Patel University

**Moderator** – Rajul Gajjar, Principal, VGEC

## Panelists

- Paul Jensen, Dean, LeBow College of Business, Drexel University
- Jack Hawkins – Jr. Vice Chancellor, Troy University
- Liesl Folks, Dean, School of Engineering and Applied Sciences, University of Buffalo, State University of New York
- Nivedita Das Kundu, Research Associate, York University, Canada

### Shirish Kulkarni

Opportunities will develop and be created if we realize that a university degree is a passport to a better life. When we talk about opportunities, we must think about job opportunities because education must be linked to employment. Learning outcomes are external and must be hands-on. Does education give the students a vision, thinking, develop decision-making abilities. Rabindranath Tagore has said that education is the opening of the minds so that knowledge can flow to everyone.

As per a HSBC Bank survey, the highest paying country in the world for fresh graduates in management is Switzerland. India is at the seventh place. Internationalization of education must lead to internationalization of job opportunities.

I invited a professor from the United States to give a lecture on herbal natural dyes on which solar energy can be generated. The solar energy this process generates has 9 percent efficiency whereas the solar energy produced by silicone has 25 percent efficiency. This is internationalization of opportunities at a one-to-one level.

### Paul Jensen

I am from a private university that has about 25,000 students. We are a Carnegie 1 university. The Carnegie Classification of Institutions of Higher Education is a framework for classifying colleges and universities in the United States. We are also a co-op university. Most of our students will do an undergraduate degree in five years. During the middle three years, they take classes for six months and do full time practical work the next six months. When they graduate, they have 1-1/2 years' work experience. Our orientation is practical, and our approach is pragmatic.

Also, I am a dean of a business school, so my talk will have a business school perspective.

I want to emphasize that technological disruption is redefining society, business and therefore education and universities. The resultant impact on the curricula is felt first on business schools.

We have several collaborations with universities across the globe. The goal of the collaborations is twofold. It is to enhance research productivity and to enhance the student experience. These collaborations take several forms – student and faculty exchanges, collaborations in research. But with all such attempts, the results are a mixed bag. Often these partnerships are built around key faculty members, and when they leave the partnership dies. Student exchanges are also one-sided because US students have no desire to go abroad and study, and this creates an imbalance.

Two opportunities to expand international partnership – demographic and geopolitics are two challenges. There will be consolidation of the enrolment process in US universities and that will provide new avenues for partnerships. Technology will also provide fresh opportunities for building partnerships. Technology is continuing to drive globalization and there are greater benefits to these partnerships as we get more globalized. Technological transformation is also changing the way we are interacting with industry. Companies are looking for universities to provide skilled talent and this provides new opportunities to universities for global partnerships. Universities will have to start collaborating with corporate entities.

### Jack Hawkins

It is my first visit to India. The topic suggests to me that it is a clean slate and therefore it is easier to draw on a clean slate. I come with three decades of experience of working with universities. The university I represent is now almost considered Alabama's state university. Alabama has been transformed over these three decades. It has now the third-largest maker of automobiles in the US, and manufacturing has acquired a new prominence in the state. Troy University serves about 20,000 students. We students from 76 countries. To attract international students, we have had to acquire the understanding of nurturing relationships. When you understand people, who are different from you, you may begin to appreciate, and appreciation and understanding builds a lasting relationship.

We had three initiatives – the first was to bring the world to Troy University, the second was to take Troy to the world; and the final initiative to take our domestic students to other countries to pursue their education. On the issue of partnership, in 1990, we were approached by the government of China to help get Chinese students in the US back into China to pursuing higher education. We launched what was later to become a prototype by launching a Sino-Indian degree program, which introduced the one-two-one program, now adopted by the American Association of State Colleges.

We are in India because of the synergies that we see here. We are energized by the government's commitment to internationalizing education, we are energized by the talent that we see here, we are energized by the possibilities. The other things that are exciting about India are that language is not a barrier, that this is a great democratic nation.

### Liesl Folks

I have been a dean for the last six years and prior to that I spent 16 years in industry. I'm often accused of being a solutionist, which in the academic talk for beneath dignity because as an engineer we are always looking for solutions to problems instead of philosophizing about them. We can philosophize all we want but until we link it to pedagogy, it is not going to matter. The reason we are interested in internationalizing of education as an institution is because we believe that we cannot make an impact unless

we have deep cultural competence.

Cultural competency is important because it helps our students and faculty walk through the world and communicate broadly with people in many places, bridging the gaps of language and culture and communicate with them on matters of importance especially in STEM. We must reach out across the planet and give students and our faculties how to navigate many cultures.

Some of our experiences in online learning have been truly eye-opening. A couple of years back, we had a faculty who decided that she wanted to learn all about blockchain technology online, but she realized that there isn't much available online on the subject. We have a partnership with Coursera, and she built a curriculum in partnership with Coursera. We now have about 20,000 active students in this course. That is phenomenal impact and gives us a glimpse on how we can make a truly global engineering workforce.

The pressure on faculty in the US to continuously produce research is too high and it isn't possible for them participate in faculty exchange programs suspending their research and teaching assignments and take a trip abroad. We are trying to overcome this challenge by introducing the concept of co-teaching, where the US professor teaches their part of the course digitally (online).

There are important set of discussions going on around the subject of internationalization of education, the opportunities it is creating and its challenges. We need to be nimble, when we get entangled in red tape. University leaders need to think about how to stimulate creativity among faculty by overcoming red tape.

**Nivedita Das Kundu**

I understand the education system both in Canada and in India because I have studied in India and I am teaching in Canada. We have gaps in both the systems. Canada has a large Indian diaspora. The Indian community is much respected. Indian students are naturally attracted to go to Canada. We must now look at the other side of the equation, and encourage Canadian students come to India. India is attracting students from other developing countries, but India should attract students from developed economies.

Similarly, educational institutions from the developed economies have already started setting up campuses in India, it is time for Indian educational institutions to set up branches in the developing countries. We should also encourage internships of students from abroad to work in Indian companies. We face challenges in this regard because the students from these developed countries don't have a proper idea of the level of economic development that India has experienced over the last two decades.

We must also collaborate on joint research projects in which there is a commonality of interest. There are over 600 MoUs between Canadian and Indian universities, apparently only 20 are in effect and active; the rest are all dormant. So, clearly, the MoU route is not leading to any tangible achievements. Funding is an important challenge.

**Shirish Kulkarni**

In summarizing the discussion and presentations we just heard, I would like to say that all the speakers gave us many ideas on the possibilities and opportunities available in the educational sector both in India and abroad. I can only emphasize that education is the only instrument that can make our world a family.

# BEST PRACTICES FROM CANADA ON RESTRUCTURING OF INDIAN EDUCATION SYSTEM

## Recommendations

**Prashant Srivastava**
Director, South Asia Seneca College, Toronto, Canada

India is at a very interesting stage of its demographic dividend — more than 60% of our population is in the working age-group which is expected to cross 65% by 2036. That is a great opportunity in front of us, but only if leveraged properly. To meet the constantly changing employment scenarios and to keep the youth updated, skilling has become a must for us as an emerging economy. Thus, the Indian Government has also recognized skill development as one of its major initiatives. The National Skill Development Mission launched by the Government of India envisions to skill and reskill about 400 million Indians by 2022.

There is an urgent need of restructuring higher education system in India. Indian Education System is one of the largest education systems, in the world, with close of 1000 Universities and over 40,000 colleges. There are around 34.21 million students enrolled into higher education system. By 2025 its projected that India will be home to world's largest working age population.

However, the Indian education system has both quality and capacity challenges.

According to NASSCOM only 7% of Indian engineering graduates have employable skills and there are over 35% teaching positions vacant in institutions like IITs. 14 million seats are required to be added by 2020 to meet educational aspiration of the rising population. Its projected that to maintain the India growth story, it will require to add over a thousand universities and 45,000 colleges in next ten years. There is less flexibility in Indian education system, there is more emphasis on core subjects. Sports and extracurricular not so important and are optional. Importance is on attendance than participation, and more emphasis on reading and memorization rather than on critical thinking.

A skilled based model from Canadian Education System:

Canada is a federation of 10 provinces and three territories. Under the Canadian Constitution, provincial governments have exclusive responsibility for all levels of education. There is no ministry or department of education at the federal level. In the Province of Ontario, 24 publicly funded colleges were established by the Government of Ontario in 1967. In Ontario, the Ministry of Advanced Education and Skills Development (MAESD) is responsible for oversight of the public college system.

Ontario Colleges including Seneca offer applied degrees, diploma, advance diploma, and post-graduate certificate programs. The programs are designed in consultations with industry stakeholders. The program advisory board consists of representatives from the industry. The skill-based education brings students up to date in a particular area of knowledge or skills.

Ontario Colleges offer Post-Graduate Programs (also known as Post- Diploma Programs) for students who have already

completed a University or College degree or diploma.

These programs are of relatively short duration (usually 1-2 years of full-time study) and offer intensive training and practical experience in specific career areas.

Post-Grad Programs can be diploma or certificate programs. Certificate programs are geared more toward individuals who want to continue to work full-time while simultaneously furthering their education in the evening or on weekends.

Seneca offers career-focused 40+ specialized graduate certificate programs that are the ideal choice for postsecondary graduates who want more career-focused education and industry experience. For professionals, a graduate certificate can lead to career advancement or provide a pathway to a new career in just one year. Many of our graduate certificates feature a work component that enables to hone skills in the chosen field and make important contacts before graduation.

There is no ranking in Canadian Education System, it offers consistent high-quality education across the country. The Provincial government maintains quality assurance and has a rigorous approval process. Canada spends 13.4% of its total public expenditure on education, more than on average across OECD countries.

Ontario's Colleges and Ontario's Ministry of Training, Colleges and Universities have defined five Key Performance Indicators to collect and report performance data in five areas- graduate satisfaction, student satisfaction, employer satisfaction, employment rate and graduation rate:

- Three of these indicators (graduate employment, graduate satisfaction, and employer satisfaction), are used to distribute performance funding to the colleges.

- The student survey is administered in class to all students beyond first semester, and the graduate & employer surveys are telephone surveys administered six months after graduation.

Suggestions for future improvement:

India needs to adapt practical, skilled based education system and imbed experiential learning programs into the curriculum which will enable students to work and get professional experience while studying and be job ready upon completion of studies.

Benefits of Skill based education system:

- Can ensure that students will maintain a license or professional certification
- Keeps them abreast of new compliance regulations or changes to existing ones
- Helps them stay current on industry standards and best practices
- Provides knowledge that can help them to improve in their current jobs
- Increases salary potential

These are just a few of the very good reasons for Educational Institutions, to invest in Skills Development and lifelong learning educational programs. And if we look at these reasons from the perspective of our current economic climate, they make even more sense. When companies are forced to run lean due to the disruption of the technology, the jobs of today may not exist tomorrow, they are more likely to retain workers who are in a position to make the most significant contributions—offer the most value for the investment the company is making in them. By the same token, professionals who stay current in their field of expertise and will adapt of the changing technological advancement are much more likely to stand out in a large pool of job applicants.

Ultimately when it rains long enough and hard enough everyone gets a little wet. Economic downturns are also like that, but lifelong education and skill development programs will be the best shelter in any economic storm. There are number of times students may change jobs in the future, according to the American Bureau of Labor Statistics, the average person changes jobs 10.8 times by the time they reach the age of 42. This means that many of students will be competing for jobs many times throughout our careers. And in the post-recession world, skilled labor will be in high demand. A research report from The Conference Board, predicts even with the increased size of the applicant pool, many employers are already struggling to find people with the right skills.

Outcome based education and Project based learning are two models, which can be implemented to deliver skill-based education.

The outcome-based education has three pillars:

1. Program Educational Objectives

2. Program Outcomes

3. Course outcome

Project based learning includes emphasis on critical thinking, creativity and communication skills.

The induction of India in the Washington Accord in 2014 is a step-in direction of implementation of outcome-based education in Engineering colleges across India.

The quality of education delivered should be uniform in all institutes of higher education, more so the education system should be fair to all, which means students from economically backward section of the society should be able to access the top-quality education.

A quick reorganization of the skill development ecosystem and the promotion of which is necessary to suit to the needs of the industry to ensure enhancement of life of the population.

India would surely rise to be the Human Resource Capital of the world by appropriately skilling its youth and convert its advantage into a dividend. Skill development initiatives will help actualize the inert potential of the country.

- Prashant Srivastava, MBA, is Director, South Asia Seneca College, Toronto, Canada

# MEETING OF THE CANADA INDIA JOINT WORKING GROUP ON EDUCATION

27 February 2019, Ottawa

## Highlights

- International Education is a growth sector contributing significantly to Canada's prosperity.
- According to 2017 study on Economic Impact of international education in Canada released in 2018, there were 494,525 International students as of Dec 31, 2017.
- International Education is a major service with exports of $18.7 billion in 2017 and has sustained approximately 200,000 jobs across Canada.
- International Education addresses skills and demographic gaps across Canada.
- There has been a 354% increase in the number of Indian students from 2011 (27,307 students) to 2017 (123,940 students).
- As of Dec 31, 2018, there were 172,600 Indian students reported studying in Canada.

The high-level Indian delegation included representatives from the Ministry of HRD, University Grants Commission, All India Council for Technical Education, Ministry of External Affairs and Indian Institutes of Technology. Canadian reps included senior officials from Global Affairs Canada, IRCC and Canadian stakeholders.

In the opening remarks, David Hartman, DG, South Asia Bureau, Global Affairs Canada mentioned that education is a pillar to India-Canada bilateral relations, and they look forward to deepening it further. David mentioned the growing importance of Asia, and India is central to this growth with expanding middle class and opportunities in Infrastructure development, workforce training, and student exchange. According to Global Affairs Canada (GAC), in 2018, the number of Indian students in Canada surpassed China, there were 173,000 Indian students studying in Canada as of Dec 31, 2018. In 2018, 70,000 Indians received PR of Canada and Canada witnessed a 17.8% increase in visitors from India.

Christopher Wilkie, Director General of International Trade, in his remark mentioned that this meeting is a follow up on Canadian PM's India visit, and the importance both countries attach to education. He highlighted to the role of Shastri Indo Canada Center (established 50 years back), a center jointly manages by the Canadian and Indian Government to promote bilateral education relations. The role of MITACS and IMPACT by which 1200 and 800 students have benefited in the bilateral student exchange.

Indian delegation briefed about their education system and international partnership initiatives. Their initiatives are University centric and ranking driven. More so Indian Educators seems are not well informed of the Canadian Education System.

Cican's Alain Roy presented about the college

system, its international projects and featured success stories of Canadian Colleges in India.

Dy. Indian High Commissioner of India Mr. Arun Kumar Sahu suggested creating a working group of Indian Canadian stakeholders to address issues of Indian students in Canada.

Erin Williams of Asia Pacific Foundation of Canada (APFC) presented on their role of a think tank in international trade, sustainability, and innovation. APFC conducts public opinion polls on Canadians view on Asia and how it's changing. APFC is working on connecting young Canadians professionally with people in Asia.

Erin presented a recent research report that Indian students perceive Canada as a migration destination rather than a study destination, Canada doesn't have the prestige factor when it comes to attracting the best of the brightest from India. Canada is less visible in East and South of Canada. APEC suggests Canada work a brand building strategy and to promote outbound mobility of Canadian students to India, by providing internship opportunities. Erin also presented their experience of sending students from Langara and SFU to India on internship programs.

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HIGHER EDUCATION FORUM INDIA 2019

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