Institutional Interventions for Enhancing Innovation Amongst Students : The Experiential Moderator

Navjeet Kaur [1]
Pallvi Arora [2]

Abstract

The twenty - first century is a century of cut throat competition, globalization, cutting-edge technology, and advancement adopted for continuous betterment and improvement. Such environments of uncertainty and fluctuations ignite a need for continuous innovation across nations to achieve success in every sphere. Universities as well as higher education institutions (HEIs) of a nation are the major agents that facilitate in inculcating innovation as a habit among youth as their several initiatives play a key role for strengthening the ecosystem of innovation in the campuses that further substantiates the culture of innovation nation-wide. Considering the same, the objective of this research paper was to determine the role of HEIs to stimulate innovation amongst students and determine the world - class practices adopted by global HEIs. The study also incorporated the adoption of Kolb's Experiential Learning approach to ignite innovation amongst students at the grass root level in a supportive innovative ecosystem.

Keywords : **innovation, interventions, higher education institutions, experiential learning approach**

JEL Classification : I23, I25, O30

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The twenty - first century is a century of cut throat competition, globalization, cutting edge technology, and advancement adopted for continuous betterment and improvement. Such environments of uncertainty and fluctuations ignite the need for continuous innovation across nations to achieve success in every sphere. Universities as well as higher education institutions (HEIs) of a nation are the major agents in inculcating innovation as a habit among youth as their several interventions or initiatives play a key role for strengthening the ecosystem of innovation in the campuses that further substantiates a culture of innovation nation-wide. It has been observed worldwide that an improved quality of practices/interventions adopted by higher education institutions and universities for equipping innovation as a habit among students is the consequence of teaching and innovation as both are complementary as well as supplementary to each other and foster an innovation culture (Choudhury, 2016).

The Union Minister of India, Shri Prakash Javadekar considers that the twenty - first century is the "century of innovation" and the Prime Minister of India, Shri Narendra Modi stated that the decade 2010 – 2020 is the

[1] *Research Scholar,* International Centre for Cross Cultural Research and Human Resource Management (ICccR & HRM), University of Jammu, Baba Saheb Ambedkar Road, Jammu Tawi - 180 006, J&K. (Email : kaur.navjeet73@gmail.com) ; ORCID iD : 0000-0003-2707-3368

[2] *Assistant Professor,* International Centre for Cross Cultural Research and Human Resource Management (ICccR & HRM), University of Jammu, Baba Saheb Ambedkar Road, Jammu Tawi - 180 006, J&K. (Email : pallvi.arora12@gmail.com) ; ORCID iD : 0000-0002-1349-6637

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"Decade of Innovation" (Press Information Bureau [PIB], 2018). As higher education institutions are the critical assets of a nation and play a significant role towards enhancing the innovation potential amongst students and for developing the culture of innovation in a nation, it becomes imperative to determine the incumbent role that HEIs play herein.

It has been explored that the Indian higher education system is one of the strongest and largest in the entire world. India has the world's second largest population after China, largest young population in the age bracket of 5 – 24 years, and after the US, India is the second largest market for e-learning that creates a massive potential for boosting the higher education network in the nation (India Brand Equity Foundation [IBEF], 2020).

In the recent past, the Indian government has made huge investments, followed appreciable measures, and has taken remarkable initiatives to encourage and raise the standard of higher education in collaboration with universities and institutions with a view to unleash creativity and innovation potential among students by developing a culture of innovation in the nation and creating a facilitating environment for the same.

The present piece of research draws attention towards the institutional role and interventions to inspire students for innovation and developing a culture of innovation in the nation. India moved upward from 86th rank to 57th rank in 2017–18 on the Global Innovation Ranking (PIB, 2018). Thus, India becomes a strong case for study aligned to the remarkable innovation improvement that has drawn our attention for the same. The paper addresses incorporation of the experiential learning approach of innovation to stimulate the drive of students to innovate at an individual level in facilitating an innovation ecosystem, that is, HEI's innovation interventions.

Objectives

(1) To determine the role of higher education institutions (HEIs) to flourish innovation amongst students.

(2) To present a conceptual view of the world class practices/interventions adopted by global HEIs.

(3) To understand the role of experiential learning in shaping the innovation potential of the students.

Literature Review

Innovation is the implementation of new/unique/novel ideas/inventions/discoveries for some purpose, and the innovation culture is the culture that supports and favours the implementation of new/latest ideas (Roffeei, Kamarulzaman, & Yusop, 2016). It has been considered that innovation is the process of introducing new elements into a culture through either new discovery or imitation of existing discovery (Schaefer, 2012). Innovation refers to the invention and implementation of management practices, processes, structures, or techniques that are new to the state of the art and are intended to further organizational goals (Birkinshaw, Hamel, & Mol, 2008). Globalization, demographic changes, science and technology, sustainable development, changes in knowledge and competence, changes in work and people's mental resources, changes in the cultural environment, governance, safety, and security are the major antecedents for encouraging innovation among students constituting innovative research, pedagogies, and organizational structure (Tierney & Lanford, 2016 ; Varis, 2007).

It has been observed that the role and initiatives of HEIs are very significant and valuable as well in order to build creative and knowledgeable students (Ahmad, 2020). Moreover, interventions of higher educational institutions and universities play a pivotal role to boost innovation among students through the creation of a conducive internal and external culture of innovation (Alpaydin, Owusu, & Moghadam-Saman, 2018 ; Bhatnagar, 2020 ; Caniëls & Bosch, 2011 ; Gronning, 2008 ; Hasanefendic, Birkholz, Horta, & Van der Sijda, 2017 ; Lundvall, 2007 ; Mykhailyshyn, Kondur, & Serman, 2018 ; Piterou & Birch, 2014 ; Vidican, 2009). In fact,

higher educational institutions basically serve as a contextual field that necessitates the need for encouraging the innovativeness among the youth of a nation (Tierney & Lanford, 2016). The enhancement of innovation is an outcome of an interaction between the ingredients of knowledge triangle comprising of education, research, and technology. Significantly, HEIs serve as the key foundation for enhancing innovation among students by unleashing their creativity and curiosity through the inculcation of innovation habits and raising the level of R&D and technology (Bhatnagar, 2020 ; Heitor, 2015 ; Lassnigg, Hartl, Unger, & Schwarzenbacher, 2017).

Despite the fact that the Indian higher education network stands amongst one of the world's largest education systems and holds a strong place in the global education system (IBEF, 2020), still the ecosystem of innovation in India is very weak and not yet fully established (Sreenivasulu, 2013). However, educational institutions have taken remarkable initiatives by introducing IICs, ARIIA, SIHs, AIM, NIC, NSSP, Unnat Bharat Abhiyan, etc. to fill the gap (British Council, 2014 ; IBEF, 2020 ; Nair, 2018 ; Sengupta & Parekh, 2009 ; Sheikh, 2017 ; Sreenivasulu, 2013 ; Thomson, 2008) and raise the innovation potential of students.

Research Gap

Interventions of higher educational institutions are considered as the major actors in equipping a habit of innovation among students (Heitor, 2015 ; Lassnigg et al., 2017 ; Tierney & Lanford, 2016) and it has been identified that this field of research is unique and under-researched as well as it has gained attention and importance from researchers and scholars in recent past. Majority of the research work conducted in this domain has emphasized upon exploring the role of HEIs in raising innovation standards among students (Caniëls & Bosch, 2011 ; Gronning, 2008 ; Lundvall, 2007 ; Vidican, 2009), where numerous world class interventions/practices employed by global HEIs to instill innovation among students has not been much explored yet. Recently, India's ranking has increased on the Global Innovation Ranking (PIB, 2018) as the level of innovation in India has improved due to the joint efforts of the Government and HEIs (Ahmad, 2020 ; Khatri & Raina, 2019). Therefore, it drew our attention to investigate about the status of innovation in India.

As experiential learning normally finds a place in establishing habits, investigation about incorporation of Kolb's Experiential Learning Approach (1984) to foster the spirit of innovation among students at the individual level in supporting and facilitating an innovation ecosystem could serve as an essential moderator to assist in developing innovation drive/force/inner urge among students at the basic/grass root level (Fink, 2003 ; Kolb & Fry, 1975 ; Kolb & Kolb, 2009 ; Litterio, 2014 ; McLeod, 2010 ; Wurdinger & Carlson, 2010).

Methodology

This research paper is based on available secondary data in the domain and includes the review of research papers including reports of British Council (2014), PIB (2018), and many others that have facilitated in determining the role of HEIs in instilling innovation amongst students. The research work adopts the conceptual framework of Kolb's Experiential Learning model (1984) to ignite innovation amongst students at the grass root level. The present research endeavor includes the time period of 10 years (recent decade) from years 2011 – 2020.

Institutional Interventions for Enhancing Innovation Among Students

Institutions act as active agents through their interventions and initiatives to raise the level of innovation among youth and creating a supportive ecosystem for innovation as well. Table 1 summarizes the numerous institutional interventions that encourage innovation among youth.

Table 1. ***Institutional Interventions for Enhancing/Inculcating Innovation Among Students***

S. No.	Author & Year	Institutional Interventions for Enhancing/Inculcating Innovation Among Students
1.	Bhatnagar (2020)	• Using research skills to solve local problems • Encouraging creativity and innovation through placement holidays • Teaching and learning through foreign university collaborations • Conducting orientation programmes • Developing skill labs
2.	Jahanian (2018)	• Encouraging entrepreneurship • Establishing collaborations and tie-ups with the private sector • Promoting and supporting diversity and inclusion • Exploring the nexus of technology and society
3.	Mykhailyshyn et al. (2018)	• Focusing upon research, education, and training • Development of education process • Development of scientific and research work • Technical and technological development • Organizational development • Economic development • Development of international cooperation • Social development • Faculty development
4.	Lassnigg et al. (2017)	• Improving interaction between education, research, and innovation
5.	Heitor (2015)	• Learning through research (practical based/experimental learning)
6.	Swanger (2016)	• Compliance with traditions • Development of supportive structure • Adequate funding, efficient faculty • Compliance with accreditation standards • Collaboration with government • Establishment of rules • Regulations, facilitate performance based funding
7.	Goddard, Kempton, & Vallance (2013)	• Consultancy services • Innovation vouchers • Knowledge transfer partnerships • Science parks • Research and technology centers
8.	Caniëls & Bosch (2011)	• Building research agreements • Building training relationships with firms • Forming active collaborations with public and private actors
9.	Vidican (2009)	• Contributing to fundamental research • Combining existing knowledge • Education and training • Creating space for open exploration of ideas • Community involvement • University research advances • Providing space for open-ended conversations • Form partnerships with other economic and social participants • Highlight the inter-industry differences

		• Publications and conferences • Technological advancement • Alteration in behavior and practices • Problem solving for industry through contract research, consulting
10.	Hatakenaka (2015)	• Academic spin-offs (interaction between industry and academics) • Development of social, cultural, and intellectual tone of the surrounding area • Participation in government and industrial decision making processes • Making education practical based

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Table 2 brings out the several institutional interventions adopted by the global HEIs to stimulate the innovation potential of students.

Whilst Table 2 reflects the several institutional interventions taken up by the global HEIs, the following paragraphs reflect the initiatives taken up by the Indian HEIs.

Table 2. ***Institutional Interventions to Inspire Students for Innovation in HEIs at the Global Level***

S. No.	University/HEI	Intervention/Practices for Boosting Innovation	Source/Reference
1.	Stanford University	• Maximum number of patents and research which are frequently cited by other academics • Best faculty in the world • Inclusion of cross traditional boundaries research projects • Collaborations between students and faculty • Strong collaborations with other parties • Adoption of latest technology • Stanford Interdisciplinary	Ewalt (2018) ; Mission.org (2018)
2.	Massachusetts Institute of Technology	• Seek permanent solutions to big and complicated problems • Patent generation • Allow students to enroll free for online classes across the globe where lectures are delivered by institutes' professors under its open-source platform • MIT International Centre for Air Transportation	Ewalt (2018) ; Mission.org (2018)
3.	Harvard University	• Continuous improvement in education • Advancement of underrepresented population • Verizon and Harvard partnership for STEM and technology courses for minority students	Ewalt (2018) ; Mission.org (2018)
4.	Arizona State University	• Instill entrepreneurial skills • Inclusion of interdisciplinary model and approach • Encourage risk-taking • Partnership approach • Importance to the process of a desired outcome rather than the outcome itself • Encourage imagination • Knowledge Enterprise Development Programme	Brennan, Broek, Durazzi, Kamphuis, Ranga, & Ryan (2014) ; Mission.org (2018) ; Panchanathan (2017) ; Swanger (2016)

		• Project Hieroglyph	
5.	Syracuse University	• Focus on forward-thinking • Advancement of academic research • Community-related innovation • Institute for Veterans and Military Families • National Veterans Resource Complex	Mission.org (2018)
6.	California State University, East Bay (Cal State East Bay)	• Diverse educational approach • MBA for global innovators	Mission.org (2018)
7.	Purdue University	• Emphasize upon quality education • Back a Boiler Programme • STEM courses	Brennan et al. (2014) ; Mission.org (2018)
8.	California Polytechnic State University (Cal Poly San Luis Obispo)	• Encourage students to learn by doing in real world settings • Innovation Sandbox • The Dairy Innovation Institute	Mission.org (2018)
9.	University of South California	• Cutting edge research • Simultaneous study and work opportunity • Master of Business for Veterans program • Mixed Reality	Mission.org (2018)
10.	Oberlin College	• First to admit African Americans and women • Experiential learning • Funding for projects • Encourage students to utilize their intellectual capabilities • Oberlin Project • Creativity and Leadership Program	Mission.org (2018)
11.	Full Sail University	• Fast-paced courses that take half time period than traditional courses • Dan Patrick Sports-Casting Program • Master of Science: Innovation & Entrepreneurship	Mission.org (2018)
12.	Babson College	• Leader in global research projects • Entrepreneurial thought & action • Social innovation lab	Mission.org (2018)
13.	Olin College	• Transforming engineering education • Affordable design and entrepreneurship • Interdisciplinary curriculum	Brennan et al. (2014) ; Mission.org (2018)
14.	University of California	• Skydeck • Fung Institute for Engineering Leadership	Mission.org (2018)
15.	Ivy Tech Community College	• Hands-on-experience • Online classrooms	Mission.org (2018)
16.	Iowa State University	• Cutting edge technology • Bioeconomy Institute • Nanovaccine Institute	Mission.org (2018)
17.	Greenville Technical College	• Collaborates between community and business leaders • Centre for Manufacturing and Innovation	Mission.org (2018)
18.	Ohio State University	• *Innovate: The Annual Conference*	Mission.org (2018)
19.	University of Maryland University College	• Achievement based admission process • Adaptive learning • Predictive analysis	Mission.org (2018)

20.	University of Chicago	• Uchicago Empower	Mission.org (2018)
21.	Michigan State University	• Common goods in uncommon ways • Financial aids to weaker section students • The MSU's Spartan Advantage Program	Mission.org (2018)
22.	Spelman College	• Leader in women education • Exxon Mobile WISE (provide funding for women education)	Mission.org (2018)
23.	John Hopkins University	• Emphasize upon research than academic education • Social Innovation Lab	Mission.org (2018)
24.	Rice University	• Inter-institutional collaborations • Space-physics department • Bioscience Research Collaborative	Mission.org (2018)
25.	Allen University	• Provide hands-on, minds-on, & hearts-on experiences • Honors Program	Mission.org (2018)
26.	GEM Modern Academy, Dubai	• Learning through 3D technology	Nelson (2018)
27.	HEIs in Finland	• Use teacher and curriculum autonomy	Nelson (2018)
28.	Steve Jobs in Amsterdam	• Think differently approach • Individualized learning approach	Nelson (2018)
29.	HEIs in Germany	• Free university education	Nelson (2018)
30.	Georgia State University	• Allow to admit racial minorities, low-income, and first generation students	Swanger (2016)
31.	Harvey Mudd College	• Reduce the gender gap in technology	Swanger (2016)
32.	University of Texas	• Facilitate funding for research • Encourage participation of Hispanic students in research	Swanger (2016)
33.	Southern New Hampshire University	• Non-traditional education system • Created College of Online and Continuing Education	Swanger (2016)
34.	Paul Quinn College	• Reduced tuition fee • Converted football field to farm field • Encourage students to earn while learning skills	Swanger (2016)
35.	University of Central Florida	• Direct Connect Program for increasing student enrollments from minority sections	Swanger (2016)
36.	City College of Chicago	• Emphasis on career programs • Placing students in jobs	Swanger (2016)
37.	Bavaria Virtual University	• Cooperation between state funded universities • Promote and coordinate the development and implementation of tailor-made online courses free of cost for students and with low fee for others	Brennan et al. (2014)
38.	US originated MOOCs	• Spun-off system • Online learning at low-cost or no-cost • Entrepreneurial skill development	Brennan et al. (2014)
39.	EU originated MOOCs	• High level political support • High level private and public sector support • Development of Hasso Plattner Institute • Online education system	Brennan et al. (2014)
40.	University of Nottingham	• Internationalization strategy • Establishment of the university campuses in Asia to make the university global	Brennan et al. (2014)

The Indian higher education system is a vast network of 39,050 colleges and 903 universities having enrollment of 37.4 million students in several courses in 2018–19 (IBEF, 2020). In the past few years, Indian institutions have played a significant role and acted as highly active agents to inculcate innovation habits to develop an innovation culture in the nation and to boost and strengthen the innovation ecosystem in collaboration with the Indian government. As per the reports presented by Ghosh (2017), PIB (2018), and IBEF (2020), the following are the major interventions introduced to enhance the innovation among Indian students and to meet the global standards :

- Network of Innovation Clubs (NICs),
- Institution's Innovation Councils (IICs),
- Atal Ranking of Institutions on Innovation Achievements (ARIIA),
- Smart India Hackathon (SIH),
- Atal Innovation Mission (AIM),
- National Student Startup Policy (NSSP), and
- Unnat Bharat Abhiyan.

All these above mentioned interventions are the combined efforts of HEIs and MHRD, Government of India for promoting innovation among the youth of India. Several individual initiatives are also taken such as introducing innovation projects in colleges, forming clusters of innovation centers, establishing collaborations between institutions and industry, organizing inter-institute research based competitions and events, doing research projects for public and private sector enterprises, creating clustering of colleges, promoting research and practical based education, establishing and promoting accreditation and assessment systems for innovations, solving contemporary issues of the industry and society, forming a research and innovation conducive climate, special focus on research by establishing research institutes, facilitating funding for innovation to encourage potential students, encouraging innovation for solving local challenges and issues, providing incentives for collaborating to foster innovation, and facilitating social innovations in backward areas.

Looking for An Experiential Learning Solution at the Grassroot Level : Discussion and Implications

Across the globe, HEIs are adopting latest and novel practices/interventions to nurture students with the spirit of innovation to survive in the twenty - first century's tremendously competitive environment. Considering the significant role that India is playing as the world's biggest educational hub and its prominent position in the global education industry, numerous interventions to foster innovation levels have been brought to light. With a view to develop a strong innovation ecosystem in India and considering the type of innovation interventions adopted by the world class institutions, an experiential learning approach to innovation is proposed through this paper. Even despite most global and Indian initiatives adopted towards innovation involve an eminent role to be played by the educational institutions, the drive to innovate remains with the student. What is significant here is how this drive may be identified, tapped, and put to action.

Kolb's Experiential Learning model (1984) involving four steps including a) concrete experience, b) reflective observation, c) abstract conceptualization, and d) active experimentation provide a basis for incorporating and developing the innovation drive in the students at the grass root level. According to this model, a learner can enter at any stage of the cycle and then follow the other stages in a sequential fashion (Kolb & Fry, 1975). The model works in a cyclic motion where the first stage of the model is concrete experience (feeling) in which completely new/novel experiences are confronted or unexplored gaps associated with already explored situations are

determined. In the second stage, reflective observation (watching), observations are reflected towards that experience or situation. The third stage is abstract conceptualization (thinking), where new ideas are developed or alterations are generated for existing ideas. In the last stage called active experimentation (doing), the abstracted conceptualization is implemented to the surrounding world for further new experiences.

Also, experiential learning is considered as a paradigm of significant learning (Fink, 2003) that helps students in learning by doing as learning with the help of discussions, participation, work group, and applying classroom information outside the classroom make students more competitive and future ready (Wurdinger & Carlson 2010). It has been summarized that the innovation drive can be escalated among students where they become curious and feel the need to explore new facts by having a concrete experience, accumulate and take note of these facts while trying to make observations about these new facts by reflective observations, which lay down the basis for analysis and conclusion through critical thinking as abstract conceptualizations. Then the approach to abstract conceptualization is adopted for doing tests on the world around in future to gain new experiences by active experimentation (Litterio, 2014 ; McLeod, 2010).

It is suggested that a combination of the self-initiated drive to innovate along with institutional interventions

Table 3. ***Applicability of Experiential Learning Model (ELM) in Higher Education Institutions and Universities Across the Globe for Inculcating Innovation Skills Amongst Students***

S. No.	HEIs/Universities that Value Experiential Learning	Source
1.	School for International Training (United States)	World Learning Inc. (2020)
2.	Faculty of Arts and Humanities, University of York (United Kingdom)	Study International (2018)
3.	College of Arts, Humanities and Social Sciences, Cardiff University (China, US, and Malaysia)	
4.	Faculty of Arts and Humanities, University College London/London's Global University (England)	
5.	School of Humanities, University of Nottingham (China and Malaysia)	
6.	School of Humanities, University of Glasgow (United Kingdom)	
7.	Muhlenberg College (USA)	Muhlenberg College (n.d.)
8.	Yale University (USA)	CAPSIM (2020)
9.	Boston University (USA)	
10.	Northwestern University (USA)	
11.	Middlebury Institute of International Studies (USA)	
12.	Tulane University (USA)	
13.	Tarrant County College Center of Excellence for Energy Technology, Texas (USA)	Berkebile Nelson Immenschuh McDowell, Inc. (BNIM, 2018)
14.	Johnson County Community College, Kansas (USA)	
15.	Palomar Community College, California (USA)	
16.	Center for Advanced and Emerging Technology, Metropolitan Community College, Nebraska (USA)	
17.	Spanish Business School (Spain)	Leal-Rodriguez & Albort-Morant (2019)
18.	Northern Illinois University (USA)	Northern Illinois University Center for Innovative Teaching and Learning (2012)

can generate better innovative outcomes. Such a combination can bring strong implications for the overall development of a strongly held mindset to innovation as the desire to innovate is now self-driven and institutional interventions serve as a facilitator towards the same. Thus, experiential learning serves as a moderator for the same. Table 3 and Table 4 demonstrate the adaptability of experiential learning model by higher education

Table 4. ***Applicability of Experiential Learning Model (ELM) in Higher Education Institutions and Universities in India for Inculcating Innovation Skills Amongst Students***

S. No.	Indian HEIs / Universities that Value Experiential Learning	Source
1.	Industrial Training Institute (ITI), Bangalore	Soni (2016)
2.	Indian Institute of Management Ahmedabad (IIMA), Ahmedabad	Kumar (2016)
3.	Indian School of Business (ISB), Hyderabad	
4.	Indian Institute of Management Bangalore (IIMB), Bangalore	
5.	Srinivas Institute of Management Studies, Mangalore	Aithal, Rao, & Kumar (2015)
6.	SRM Institute of Science and Technology	SRM Institute of Science and Technology (n.d.)
7.	All India Shri Shivaji Memorial Societies Institute of Information Technology, Maharashtra	All India Council for Technical Education (AICTE) (n.d.)
8.	Ballari Institute of Technology and Management, Karnataka	
9.	Tecnia Institute of Advanced Studies, Delhi	
10.	Walchand Institute of Technology, Maharashtra	
11.	Institute of Engineering and Technology, Bhaddal Technical Campus, Punjab	
12.	Shree Swami Atmanand Saraswati Institute of Technology, Gujarat	
13.	Army Institute of Technology, Maharashtra	
14.	Parul Institute of Pharmacy and Research, Gujarat	
15.	KSR Institute for Engineering and Technology, Tamil Nadu	
16.	Bengal Institute of Technology and Management, West Bengal	
17.	Vidya Pratishthan's Polytechnic College, Maharashtra	
18.	LOYOLA-ICAM College of Engineering and Technology, Tamil Nadu	
19.	SSM College of Engineering, Jammu & Kashmir	
20.	PSG College of Technology, Tamil Nadu	
21.	BVRIT Hyderabad College of Engineering for Women, Telangana	
22.	Dr.B.R. Ambedkar Institute of Technology, Andaman and Nicobar Islands	
23.	Chaitanya Postgraduate College (MBA) Autonomous, Telangana	
24.	Chaitanya Postgraduate College (MCA) Autonomous, Telangana	
25.	Manipal Institute of Technology, Karnataka	
26.	R.K.M. Engineering College, Tamil Nadu	
27.	Maharaja Agrasen Institute of Technology, Delhi	
28.	Institute of Chemical Technology, Maharashtra	
29.	Dronacharya College of Engineering, Haryana	
30.	Dronacharya Group of Institutions, Uttar Pradesh	
31.	Globsyn Business School, West Bengal	
32.	DKTE's Textile & Engineering Institute, Maharashtra	
33.	Tata Institute of Social Sciences (TISS)	Tata Trusts (2020)

institutions and schools across the globe and particularly in India, respectively for inculcating innovation skills amongst students.

Experiential learning has become an essential part of the present day's education system as modern technological advanced education system has taken up the place of the traditional education system (Nath, Behura, Kumar, Kanak, & Sundararajan, 2019). It can be taken place inside as well as outside the classroom and is more advantageous in comparison of traditional learning. Table 5 displays the numerous activities through which experiential learning can take place, which further help in escalating the innovation skills amongst students and make them future ready.

Table 5. ***Activities Through Which Experiential Learning Can Take Place for Enhancing Innovation Skills Amongst Students***

S. No.	Experiential Learning Activities	Source
1.	• Apprenticeship • Clinical experiences • Fellowships • Field works • Internships • Practicum • Service-learning/Simulations and gaming/role-playing • Student teaching • Study abroad • Undergraduate research • Volunteering	The University of Tennessee. (n.d.)
2.	• Giving problem-based situations, dividing students into teams, assign time duration, and share broad expectations with innovative outcomes • Latest presentation methods, live projects, movies, and 3-D models • Case studies • Hire highly well qualified faculty • Invite guest faculty from top institutions of the nation and from other nations as well for collaborative teaching • Professional training • Conducting national and international conferences	Sethi (2018)
3.	• Allow sufficient time for debriefing after experience • Build communities for practice such as teams, buzz groups, online communities • Debrief thoughtfully • Establish clear class goals and relate the experiences explicitly • Allow students to predict their performance and then evaluate it • Pay attention to their emotional journey • Address issues explicitly	Bruner (2017)
4.	• Global learning/internships • Service learning courses • Internships • Valuing learner independence • Active learning as a process • Intellectual and social engagement	Chorazy & Klinedinst (2019)
5.	• Problem based learning/problem solving approach	Clark, Threeton, &

	• Hands-on activities • Experiences based learning • Inquiry based learning	Ewing (2010)
6.	• Student-centered learning • Flexible learning outcomes • Aim to develop knowledge and skills through experiences • Flexible structure • Minimal facilitation • Group discussions and debate on open ended topics before the commencement of topic and after the completion of the topic as well • Allow students to take initiatives and make decisions • Pro and con grid • Cross-age peer tutoring • Student-generated test questions • Fishbowl • Prodigy game • Make a mnemonic • Field trip activities	Raudys (2018)
7.	• Classroom based activities such as role playing, games, case studies, simulations, presentations, etc. • Field based activities including internships, practicum, service learning, and cooperative education	Schwartz (n.d.)
8.	• Viewing existing situations from different point of views, generating new ideas, brainstorming, working in teams, listening with an open mind, receiving feedbacks • Hands-on experiences, problem solving, carrying out new plans, new and challenging experiences, initiatives for risk-taking, field work, testing approaches • Reflective observations, inductive reasoning and developing theoretical & analytical models, readings, lectures, • Active experimentation ; decision-making ; practical applicability of ideas, simulations, laboratory assignments	Kolb & Kolb (2009) ; McCarthy (2016)
9.	• Role playing • Simulation • Debate • Case studies • Writing to learn • Small group learning • Assessment as learning • Problem based learning • Service learning • Online learning	Fink (2003)

The experiential learning activities discussed in Table 5 along with many others help in bridging the gap between industry and academia.

Conclusion

Today is the era of extreme transformations, constant upgradation of technology, and advancement in every aspect of human life. Rather than following patterns of traditional education system of textbooks and blackboards,

universities and higher education institutions at the international as well as national levels have started acknowledging the significance of 'learning by doing' and 'hands-on-experience' that help in broadening the knowledge span of students, commitment, engagement, and enhancing their confidence level as well. Using Kolb's Experiential Learning Model as a moderator, universities and HEIs play an eminent role in shaping innovativeness amongst students.

By considering the importance of the phenomenon of 'learning by doing' now, universities and HEIs have initiated the applicability of Kolb's Experiential Learning Model in designing their curricular, co-curricular, and extra-curricular activities along with encouraging participative and experiential learning activities to instill innovation as a habit amongst students and strengthening the innovation ecosystem across the globe. Through the use of practices of modern educational system of practical and experience based learning, universities and HEIs have become active agents of driving the students' personal and professional development, bridging the huge gap between academics and industry while ensuring simultaneous inside and outside classroom success worldwide. With a view to impart quality and excellent innovation education amongst students for making them future ready, the Indian universities and HEIs have to best adapt to experiential learning methodology. This shall not only enable in uplifting their present status, but also act as a driver for matching the extraordinary pace of educational growth of world class universities and HEIs.

Theoretical Implications

This research endeavor majorly revolves around the examination of the phenomenon of interest, including the role of HEIs in enhancing innovation amongst students, world-class interventions/practices used by global HEIs, present status of innovation interventions adopted by Indian HEIs, and incorporation of experiential learning solutions to boost innovation drive among students at the basic level. All these areas under study are recent to explore and have become the center of attraction for researchers and scholars in the recent past. Thus, investigating about these above - mentioned realms will provide conceptual information for the same and make valuable contributions to the concerned literature as well which further help in accommodating future research studies.

Policy Implications

In the current time, to make students more innovative and future ready, it has become an urgency for higher education institutions of a nation to include 'learning by doing' practices as a core of their curriculum formation strategy. HEIs must focus on both inside the class (role playing, games, case studies, simulations, presentations, etc.) and outside the class (internships, practicum, service learning, and cooperative education, etc.) learning activities. Kolb's Experiential Learning Approach is suitable for serving this purpose as this model emphasizes upon practical implementation of the conceptual knowledge gained through critical thinking. Ensuring that the future workforce gains the appropriate skills, such grass-root level initiatives are significant and must be made a part of the policy framework so that critical thinking, innovation, creativity, rationality, etc. become the core of a student's personality. Even the designing of the curriculum at all levels must have a deepened focus on such skills so that they are imbibed in the students from their initial learning stages.

Limitations of the Study and Scope for Future Research

The present research work provides a conceptual view of the world class practices/interventions adopted by global HEIs. It has provided only theoretical information to determine the role of HEIs to flourish innovation

amongst students and to understand the role of experiential learning in shaping the innovation potential of the students as well. To meet the objectives of the study, only secondary data available in the domain were taken into consideration.

Thus, there lies immense future research scope for conducting further studies purely based on quantitative data and a combination of qualitative and quantitative methods. As this piece of research work represents a comparison of institutional interventions of Indian HEIs against institutional interventions adopted by world class HEIs to instill innovation amongst students, it can be replicated for making comparisons of different nations across the globe and also to know the status of institutional interventions of HEIs in different nations and ensure greater learning amongst the participants.

Authors' Contribution

Dr. Pallvi Arora conceived the idea of this research. Navjeet Kaur gathered the secondary data and worked on the compilation part of the research. The writing of the manuscript was done jointly by both the authors.

Conflict of Interest

The authors certify that they have no affiliations with or involvement in any organization or entity with any financial interest, or non-financial interest in the subject matter, or materials discussed in this manuscript.

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About the Authors

Navjeet Kaur is a Ph.D. Research Scholar at ICccR & HRM, University of Jammu, J&K. She is working in the domain of cross-cultural management and her areas of interest include cultural management, human resource management, organizational behaviour, and gender based studies.

Dr. Pallvi Arora is an Assistant Professor at ICccR & HRM, University of Jammu, J&K. She has extensive experience of teaching and research in cross cultural management, HRM/HRD, OB, and marketing. She has published in journals of national and international repute.