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Effects of Innovative Business Education on Entrepreneurial Development in India: Empirical Research of Educational participation, Capabilities and Business performance

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Abstract

This paper explores the effect of innovative business education on the growth of entrepreneurs in India by considering and investigating how the Curriculum Innovation (CI), Pedagogical Innovation (PI), Technology-Enabled Learning (TEL) and Entrepreneurial Ecosystem Support (EES) influence the development of entrepreneurial capabilities and business performance in India. Primary data were gathered in the form of 250 entrepreneurs having formal or informal business education by employing a quantitative, explanatory and cross-sectional research design, using a structured Likert-scale questionnaire, and supplemented by secondary information provided by DPIIT, Startup India and the Innovation Cell at the Ministry of Education. The results show that new learning interventions, to a considerable extent, contribute to the improvement of strategic decision-making, financial, marketing, network power and psychological resilience. The results of the correlation indicate that the Educational Engagement Score bears a strong positive correlation with the important indicators of business performance, especially funding raised ($r = 0.410$), revenue growth ($r = 0.382$), and employee growth ($r = 0.321$). Regression analysis also proves that education engagement is the most significant predictor of revenue growth ($b = 0.381$, $p < 0.001$) compared to prior experience and age of the firm. These findings are supported by secondary ecosystem data that places the performance of the entrepreneurial activities in the context of the fast-growing startup and institutional innovation environment in India. In sum, the research presents some empirical data that creative business education particularly experiential, mentor-based and application-based learning is a defining factor in developing entrepreneurial skills and fast-tracking the development of business in India. The findings highlight the importance of policymakers and educational establishments to focus more on high-impact, experiential learning models in order to enhance the entrepreneurial ecosystem in India.

Keywords

Creative Business Education, Learning Inquiry, Curriculum Invention, Pedagogical Invention, Learning with Technology, Entrepreneurial Development

Introduction

The entrepreneurial environment of India has experienced a radical growth in the last ten years, owing to a fast trend of digitalization, changing consumer markets, and also policy encouragement to promote growth through innovation. India has experienced a significant increase in the DPIIT-registered startups, and it is one of the fastest-growing entrepreneurial ecosystems in the world (Ministry of Commerce and Industry, 2023). This trend reveals the move to knowledge-based businesses and emphasizes the necessity to provide innovative business education that is structured and focused on innovation to prepare young entrepreneurs with the skills needed to cope with the dynamism of the market environment (Sharma and Sheth, 2022; Arora and Wadhwa, 2021).

At the same time, institutions of higher learning have become central clusters of the national innovation system. Innovation and entrepreneurial efforts are now institutionalised through efforts like the Innovation Cell (MIC) at the Ministry of Education or the Institution of Innovation Council (IIC), which stimulates incubation, mentoring, and experience (Ministry of Education, 2022; Singh and Khatri, 2023). These formal programs are a result of a national understanding that entrepreneurial skills are best acquired through practical experience and exposure and not through purely theoretical training (Gupta and Bansal, 2023; Hussain and Noronha, 2022). The trend of adopting experiential and industry-immersive learning is reflective of the global trends of focusing on the applied entrepreneurial training as a driver towards venture creation and sustainability (Fayolle and Gailly, 2015; Morris et al., 2020; Neck and Corbett, 2018; Nabi et al., 2017; Jones et al., 2018). This is also exacerbated by different educational levels, levels of technology adoption, and uneven exposure to mentorship systems in emerging economies such as India (Kumar and Dangi, 2021; Tripathi and Singh, 2022).

Moreover, empirical data indicates the existence of a high correlation between creative learning activities and entrepreneurial performance. It is also shown that entrepreneurs exposed to experiential learning and systematic mentoring have been found to exhibit enhanced business model development, resources mobilisation, and venture growth when compared to their counterparts that are only exposed to conventional classroom-based approaches (Arranz et al., 2020; Maritz et al., 2021; Rauch and Hulsink, 2021). Online learning, which is facilitated by technology and which has accelerated during and after the COVID-19, has further expanded access to business education and has introduced new potential interactive learning methods, which enhance scalability and flexibility (Dhawan, 2020; Bawa, 2022). These changes are an indicator of high demand to empirically investigate the combination of various elements of innovative business education on the overall impact on entrepreneurship in India.

With this background, the current study looks at the influence of innovative business education on the growth of entrepreneurs by evaluating the connections that exist between the engagement in education, entrepreneurial capabilities, and business performance. This study can be seen as a contribution to the overall knowledge of how educational intervention can be converted into entrepreneurial success by combining primary data with businessmen and framing it in the context of the innovation ecosystem that is developing in India (Rae, 2021; Mitra and Basu, 2022). The results will help policymakers, educators, and ecosystem builders to improve the entrepreneurship education in order to be more consistent with the changing economic environment in India and needs of modern business creation.

Methodology

This quantitative study is an explanatory, cross-sectional study, which aims to test the relationships between Curriculum Innovation, Pedagogical Innovation, Technology-Enabled Learning, and Entrepreneurial Ecosystem Support with an entrepreneurial growth, which is measured in terms of business performance, innovations, and entrepreneurial capabilities. The data were collected using a structured, Likert-scale questionnaire on 250 entrepreneurs in India with formal or informal business training backgrounds on a purposive and snowball sampling over a period of May to November 2025, as the primary data. Macro-level triangulation was done using secondary data obtained in DPIIT, Startup India reports and Ministry of Education-IIC documents.

The survey was done and the demographics, exposure to innovative educational components, perceived usefulness and business performance indicators were involved. The respondents appraised seven educational aspects such as mentorship, live projects, and case studies and rated the influence on decision-making and capacity building. The growth of revenues, increase in the number of employees, profitability, and funding were used to evaluate business outcomes. Composite Educational Engagement Score has been developed, descriptive and inferential statistics were used to analyse the correlations between innovative education and entrepreneurial results.

Results

Table 1 shows the number of startups that are recognized in DPIIT each year and the direct jobs that have been created in the period between 2018 and 2025. The statistics indicate two different stages

Table 1: Year-wise entities and Jobs created

Year	Number of entities recognised as startups by DPIIT (in that year)	Direct jobs created (number)
2018	8,635	100,646
2019	11,279	163,463
2020	14,498	181,404
2021	20,046	210,545
2022	26,542	274,685

2023	92,683	391,943
2024	157,706	178,316
2025	159,157	Not Available

Phase 1: High-Growth Trajectory (2018-2023).

This was the time of exponential growth of formal startup ecosystem in India. Compound annual growth rate (CAGR) of the number of DPIIT-recognized entities has grown a very high 61.06, with a starting level of 8,635 in 2018 and an ending level of 92,683 in 2023. This boom came with the growth in job creation, direct employment rose by 100,646 in 2018 and peaked at 391,943 in 2023. The similar growth of startup formation and job creation highlights the role of the sector in contributing to the growth and innovation in the economy of the country.

Phase 2: Ecosystem Maturation (2024-2025)

A shift is observed in 2024 and 2025. Still, known startups kept increasing (157,706 in 2024 to 159,157 in 2025), however, direct employment dropped significantly in 2024 (178,316 jobs versus 391,943 in 2023).

Comprehensively, data on the ecological level signify a shift towards faster scale to strategic sharpness- a setting in which the necessity of inventive, ability-creating business learning is urgent.

Table 2: Academics and Innovations in Institutions

Academic year / period	**Approx. number of HEIs with IIC**	**I&E activities conducted in that academic year**	**Average I&E activities per individual (in IIC institutions)**	**Notes**
2018–19	952 IICs	–	< 4 activities per individual	First cycle of IICs established nationwide.
~2020 (IIC 3.0 phase)	~1,700 HEIs with IIC	–	~8 activities per individual (by 2020–21)	MoE/A ICTE communication on IIC 3.0.
2021–22	>2,700 institutions with IIC	63,288 I&E activities	~10 activities per individual	Annual performance of IIC 4.0 (2021–22).

Table 2 is a summary of the fast growth and institutionalisation of the Innovation and Entrepreneurship (I&E) activities in Higher Education Institutions (HEIs). The IIC enabled institutions have increased to over 2,700 by 2021-22 since the creation of Institutional Innovation Councils (IICs) in 2018-19. Along with such structural development, the degree of involvement has also risen to a greater extent.

I&E activities per person increased by 2021-22 as compared to 2018-19 (average 10; previous 4 activities).

In 2021-22, I&E activities were recorded at 63,288, showing a high level of grassroots involvement by students and faculty.

The progressive IIC models (1.0 to 4.0) are evidence of a progressive national initiative to progress beyond the shallow adoption to profound involvement and quantifiable innovation results.

These institutional statistics support the role of HEIs as an important part of the entrepreneurial pipeline in India and provide formal mentorship and live project and ecosystem engagement opportunities.

Table 3: Demographic and Professional Profile of Respondents (N=250)

Characteristic	Category	Frequency	Percentage (%)
Gender	Male	158	63.20%
	Female	92	36.80%
	Total	**250**	**100.00%**
Age Group	Less than 25 years	98	39.20%
	25 - 34 years	105	42.00%
	35 - 44 years	37	14.80%
	Above 45 years	10	4.00%
	Total	**250**	**100.00%**
Firm Stage	Early-Stage (0-3 years)	112	44.80%
	Growth-Stage (4-7 years)	89	35.60%
	Mature (8+ years)	49	19.60%
	Total	**250**	**100.00%**
Previous Business Education	Formal MBA/BBA	95	38.00%
	Short-term Certifications/Workshops	78	31.20%
	No Formal Business Education	77	30.80%
	Total	**250**	**100.00%**

A total of 250 entrepreneurs will be used as the primary sample, and the demographics of the sample will be outlined in Table 3. The sample is predominantly male (63.2), which is the indication of the gender imbalance in the Indian entrepreneurship, but the number of females (36.8) is nevertheless high.

Most (81.2) of the respondents fall in the age bracket of 25-40 years meaning that the Indian entrepreneurship is young. In terms of firm stage, distribution is equal with 44.8 percent early-stage ventures, 35.6 percent growth-stage and 19.6 percent mature firms. Educational background On education, 38.0% have a formal business degree (MBA/BBA) but 69.2% have some business education (including certifications or incubator/accelerator training). This underscores the growing significance of different, more versatile and creative education routes other than degree programmes taking long periods of study.

Table 4: Exposure to and Perceived Usefulness of Innovative Educational Components

Educational Component	Mean Exposure	Std. Dev. (Exposure)	Mean Usefulness	Std. Dev. (Usefulness)
Case Studies based on Indian Startups	3.45	1.12	4.52	0.68

Mentorship from Industry Practitioners	2.98	1.24	4.68	0.55
Live Projects with Real Companies	2.75	1.31	4.61	0.72
Simulation Games/Business Labs	2.41	1.19	4.05	0.89
Bootcamps (Intensive, short-term)	3.82	1.05	4.28	0.77
Digital/Online Learning Platforms	4.51	0.76	3.95	0.94
Networking Events with Investors/Peers	3.91	0.98	4.55	0.61

Table 4 is a comparison of the mean exposure of seven innovative educational elements and perceived usefulness. The findings indicate the existence of an exposure-usefulness dichotomy:

Highest exposure:

- Digital/Online Platforms (Mean = 4.51)
- Bootcamps (Mean = 3.82)

Highest usefulness:

- Mentorship by Industry Practioners (Mean = 4.68)
- Live Projects (Mean = 4.61)
- Indian Startup Case Studies (Mean = 4.52)

Whereas, scalable formats (e-learning, bootcamps) claim the majority of the exposure, experiential aspects (mentorship, live projects) are considered more valuable but underused. This implies that there is a lack of alignment between the educational modes and the desired needs of learning by the entrepreneurs. The respondents highly prefer learning-by-doing and real-world lessons as opposed to content-oriented or passive learning methods.

Table 5:Perceived Impact of Innovative Business Education on Growth Metrics (n=250)

Growth Metric	Strong Negative Impact (1)	Negative Impact (2)	Neutral (3)	Positive Impact (4)	Strong Positive Impact (5)	Mean Score
Strategic Decision-Making	0 (0.0%)	6 (2.4%)	39 (15.6%)	130 (52.0%)	75 (30.0%)	4.10
Financial Management Skills	2 (0.8%)	4 (1.6%)	46 (18.4%)	139 (55.6%)	59 (23.6%)	4.00

Marketing & Sales Effectiveness	0 (0.0%)	9 (3.6%)	51 (20.4%)	125 (50.0%)	65 (26.0%)	3.99
Network Strength	0 (0.0%)	2 (0.8%)	20 (8.0%)	113 (45.2%)	115 (46.0%)	**4.36**
Risk Management Ability	3 (1.2%)	10 (4.0%)	63 (25.2%)	120 (48.0%)	54 (21.6%)	3.85
Confidence & Resilience	0 (0.0%)	7 (2.8%)	32 (12.8%)	123 (49.2%)	88 (35.2%)	4.17
Access to Funding	0 (0.0%)	3 (1.2%)	72 (28.8%)	101 (40.4%)	74 (29.6%)	3.98

Table 5 shows the perceived influence of innovative business education on seven competencies related to growth by the respondents. The largest effects were realized on:

Network Strength (Mean = 4.36) - More than 91% of respondents said that they impacted positively or strongly.

Confidence & Resilience (Mean = 4.17) - A very important psychological strength of a founder.

These results point to the fact that social capital and psychological capital, two key drivers of successful entrepreneurship, are encouraged by modern business education.

It was also strongly positively impacted on:

Strategic Decision-Making (Mean = 4.10) - 82percent positive responses.

Financial Management (Mean = 4.00)

Marketing/ Sales Effectiveness (Mean = 3.99)

The effect on the Access to Funding (Mean = 3.98) is significant, whereby, improved planning, pitch preparedness, and networks imply improved fundraising. The lowest impact, although positive, is given to Risk Management (Mean = 3.85), which implies a possible area of curricular improvement.

Table 6: Cross-Tabulation of Firm Stage vs. Preferred Educational Format

Firm Stage	Short Bootcamps	Long-term Courses	One-on-One Mentoring	Peer Learning Groups	Total
Early-Stage (n=112)	45 (40.2%)	25 (22.3%)	30 (26.8%)	12 (10.7%)	112 (100%)
Growth-Stage (n=89)	30 (33.7%)	20 (22.5%)	15 (16.9%)	24 (27.0%)	89 (100%)
Mature (n=49)	10 (20.4%)	20 (40.8%)	5 (10.2%)	14 (28.6%)	49 (100%)
Total (N=250)	85 (34.0%)	65 (26.0%)	50 (20.0%)	50 (20.0%)	250 (100%)

Table 6 is a comparison between firm stage and preferred educational format. There are obvious stage-specific tendencies:

Early-stage founders favour:

- Short Bootcamps (40.2%)
- One-on-One Mentoring (26.8%)

They demand fast learning and personal instructions.

Founders in the growth stage prefer:

- Peer Learning Groups (27%)

At this stage, entrepreneurs can get value in the form of collective problem-solving and exposure to other scaling issues.

Mature founders prefer:

- Long-term Courses (40.8%)

This is an indication of their necessity to have a high level of strategy and specialisation in order to grow.

The findings point to the necessity of various educational provisions according to the venture lifecycle.

Table 7: Correlation between Educational Engagement and Business Performance Metrics (N=250)

Variable	**1**	**2**	**3**	**4**	**5**
Educational Engagement Score	1				
Revenue Growth (Last 2 Years)	0.382	1			
Employee Growth (Last 2 Years)	0.321	0.745	1		
Profitability	0.295	0.612	0.588	1	
Funding Raised (in INR Cr.)	0.410	0.520	0.481	0.389	1
Note: All correlations are significant at the $p < 0.01$ level (2-tailed).					

Table 7 demonstrates that there are statistically significant positive relationships ($p < 0.01$) between Educational Engagement Score and all business performance indicators:

Funding Raised: $r = 0.410$ (strongest)

Revenue Growth: $r = 0.382$

Employee Growth: $r = 0.321$

Profitability: $r = 0.295$

These findings suggest that a richer and deeper involvement in innovative education is a strong contributor to successful fundraising, scaling, and the overall success of the businesses

Table 8: Regression Model Summary for Variables Predicting Revenue Growth

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.501	0.251	0.242	0.714
Predictors: (Constant), Educational Engagement Score, Prior Experience (in years), Firm Age (in years)				

Table 8 and Table 8a are the results of linear regression indicating that the model accounts 24.2% of the variance in revenue growth (Adjusted R2 = 0.242, $p < 0.001$). Among the predictors:

The best predictor is Educational Engagement Score ($b = 0.381$, $p < 0.001$).

The impact of Prior Experience is small but substantial ($b = 0.151$, $p = 0.033$).

The Age of firms is not a significant predictor of revenue ($p = 0.077$).

Therefore, new business education proves to have a significant and independent impact on the increase in incomes of entrepreneurs, even without experience and firm maturity.

Table 8a: Coefficients of the Regression Model

Variable	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t-value	p-value
(Constant)	1.205	0.245		4.912	0.000
Educational Engagement Score	0.388	0.072	**0.381**	5.389	**0.000**
Prior Experience	0.045	0.021	0.151	2.143	0.033
Firm Age	0.032	0.018	0.124	1.778	0.077
Dependent Variable: Revenue Growth (Last 2 Years)					

Discussion

The analysis demonstrates that creative entrepreneurial (business) education is a multifaceted criterion that corresponds intensively to the entrepreneurial growth in India. Although digital platforms and bootcamps are rather widespread, mentorship, live projects and India-specific case studies are much more effective with entrepreneurs. This shows that institutions have to move towards models of context-based learning and hands on learning. The overall positive impact of innovative education on decision-making, financial skills, networking and resilience also indicates its contribution to the accumulation of cognitive and psychological competencies. The fact that the educational engagement correlates strongly with the performance measures, especially the increase in funds and revenues, also testifies to the fact that innovative learning is economically viable.

Conclusion

The results confirm that creative entrepreneurship training will play a key role in enhancing entrepreneurial skills and enhancing business performance. The most valuable learning is experiential, mentorship and context based learning. With the maturation of the startup ecosystem in India, it will be important to focus on immersive and stage-based approaches to education in order to maintain the success of the entrepreneurial activity in the long term.

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