

# Experiential learning, employability, and entrepreneurial intentions in Indian higher education: A systematic review and policy perspective

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**Abstract:** This systematic literature review synthesizes evidence from 30 scholarly publications to examine the intersection of experiential learning, employability skills development, and entrepreneurial intentions within Indian higher education. The review reveals that experiential learning approaches—including internships, live projects, industry partnerships, and hands-on entrepreneurship programs—significantly enhance both employability outcomes and entrepreneurial intentions among Indian students. Key findings indicate that experiential learning positively influences entrepreneurial intention ( $\beta = 0.042$ ), with entrepreneurial self-efficacy serving as a critical mediator that amplifies this effect ( $\beta = 0.090$ ). Collectively, experiential learning, self-efficacy, and entrepreneurial attitude explain 89.6% of the variance in entrepreneurial intentions. The National Education Policy (NEP) 2020 emerges as a transformative framework emphasizing skill-based experiential learning across all educational levels, aligning the curriculum with industry requirements, promoting vocational training, competency-based education, and lifelong learning. However, significant implementation gaps persist, including inadequate funding, limited industry-academia collaboration, insufficient mentorship infrastructure, and challenges in faculty preparedness for experiential pedagogy. The review identifies critical policy imperatives: establishing comprehensive entrepreneurship ecosystems within universities, enhancing faculty entrepreneurial experience and training, creating institutional start-up funds, strengthening university-industry partnerships, and addressing gender-specific barriers to entrepreneurship. These findings provide evidence-based guidance for policymakers, educational administrators, and curriculum designers seeking to transform Indian higher education into a catalyst for employability and entrepreneurial capacity building in alignment with national development goals.

**Keywords:** entrepreneurial learning; entrepreneurship; NEP 2020; employment

## 1. Introduction

### 1.1. Context of Indian higher education

India's higher education system, one of the largest globally, faces the dual challenge of preparing graduates for employability in a rapidly evolving job market while simultaneously fostering entrepreneurial capacity to drive economic growth and innovation. With a significant youth demographic and ambitious national development goals articulated in initiatives such as Startup India, Skill India, and Aatmanirbhar Bharat (Self-Reliant India), the role of higher education institutions (HEIs) has become increasingly critical [1]. Traditional pedagogical approaches characterized

by rote learning, theoretical emphasis, and limited industry engagement have been identified as inadequate for developing the competencies required in the 21st-century economy [2]. Globally, countries that have invested in reforming higher education toward practice-based and industry-aligned models have witnessed stronger graduate employment outcomes and higher rates of venture creation [3,4].

Recent scholarship also emphasizes that higher education institutions must transition from knowledge transmission models to competency-oriented systems that integrate experiential and practice-based learning. Such approaches encourage innovation, problem-solving, and entrepreneurial thinking, which are essential for preparing graduates for uncertain and dynamic labor markets [5, 6]. Furthermore, global studies indicate that universities that embed experiential learning within curricula demonstrate stronger graduate employability outcomes and higher levels of entrepreneurial activity among students [7, 8]. The shift toward competency-based systems is further reinforced by the World Economic Forum (2020), which identifies complex problem-solving, critical thinking, and creativity as the most in-demand skills in an economy increasingly shaped by automation and artificial intelligence.

The National Education Policy (NEP) 2020 represents a paradigm shift in Indian education, explicitly emphasizing experiential learning, skill development, vocational training, and entrepreneurship education as core components of curriculum reform [9]. This policy framework envisions embedding skill development from schools through higher education institutions, promoting interdisciplinary learning, reducing rote memorization, and fostering problem-solving, critical thinking, and innovation [10]. Within this context, experiential learning—defined as learning through direct experience, reflection, and application—has emerged as a pedagogical approach with the potential to bridge the gap between academic knowledge and practical competencies required for both employment and entrepreneurship [11]. The policy draws inspiration from international frameworks such as Finland's phenomenon-based learning model and Germany's dual education system, adapting these principles to India's socio-economic diversity [12,13].

In addition, NEP 2020 aligns with international educational reforms that emphasize competency-based and experiential learning frameworks as mechanisms to enhance workforce readiness and entrepreneurial capability. Research suggests that integrating internships, project-based learning, and industry collaboration into higher education curricula significantly improves students' ability to apply theoretical knowledge in real-world contexts [14]. These reforms are particularly significant for developing economies such as India, where bridging the education–employment gap is a key national priority. According to the India Skills Report (2022), only approximately 46% of Indian graduates were considered employable by industry standards, underscoring the urgency of curricular transformation across institutions [15].

## **1.2. Research objectives**

This systematic literature review aims to:

1. Synthesize empirical evidence on experiential learning approaches implemented

in Indian higher education contexts.

2. Examine frameworks and outcomes of employability skills development programs.
3. Analyze the relationship between experiential learning and entrepreneurial intentions among Indian students.
4. Identify the integration mechanisms linking experiential learning, employability, and entrepreneurship.
5. Evaluate policy initiatives and their implementation challenges.
6. Identify research gaps and propose future research directions.
7. Provide evidence-based policy recommendations for strengthening the experiential learning ecosystem in Indian higher education.

These objectives collectively seek to develop a comprehensive understanding of how experiential learning can serve as a strategic pedagogical tool to enhance both employment readiness and entrepreneurial capability among university graduates. By synthesizing empirical evidence and policy perspectives, the study also aims to inform educational reform efforts aligned with national development priorities and global best practices in higher education innovation [16]. The scope of this review is deliberately broad to capture cross-disciplinary dynamics, given that experiential learning transcends individual academic fields and intersects with psychology, economics, organizational behavior, and public policy [17].

### **1.3. Significance of the study**

This review addresses a critical knowledge gap at the intersection of three interconnected domains—experiential learning pedagogy, employability skills development, and entrepreneurship education—within the specific context of Indian higher education. Understanding how these domains interact and influence student outcomes is essential for designing effective educational interventions, informing policy decisions, and optimizing resource allocation in a resource-constrained environment. The findings have implications for curriculum designers, faculty development programs, institutional administrators, policymakers, and industry partners engaged in collaborative education initiatives. Given that India is projected to be the world's third-largest economy by 2030, the alignment of higher education outcomes with national economic ambitions is not merely an academic concern but a pressing governance imperative [18].

Moreover, existing research suggests that experiential learning not only improves skill acquisition but also enhances students' entrepreneurial self-efficacy, opportunity recognition abilities, and innovation capacity. These outcomes are particularly important for emerging economies seeking to promote startup ecosystems and knowledge-based economic growth through higher education institutions [7, 19]. Consequently, this study contributes to the broader discourse on transforming universities into engines of innovation, employability, and sustainable economic development. The review also contributes to the international scholarship on entrepreneurship education by situating India's experience within a comparative

global framework, offering insights applicable to other developing and middle-income countries undergoing similar educational transformations [20].

## 2. Systematic review methodology

Figure 1 demonstrates the systematic review methodology.

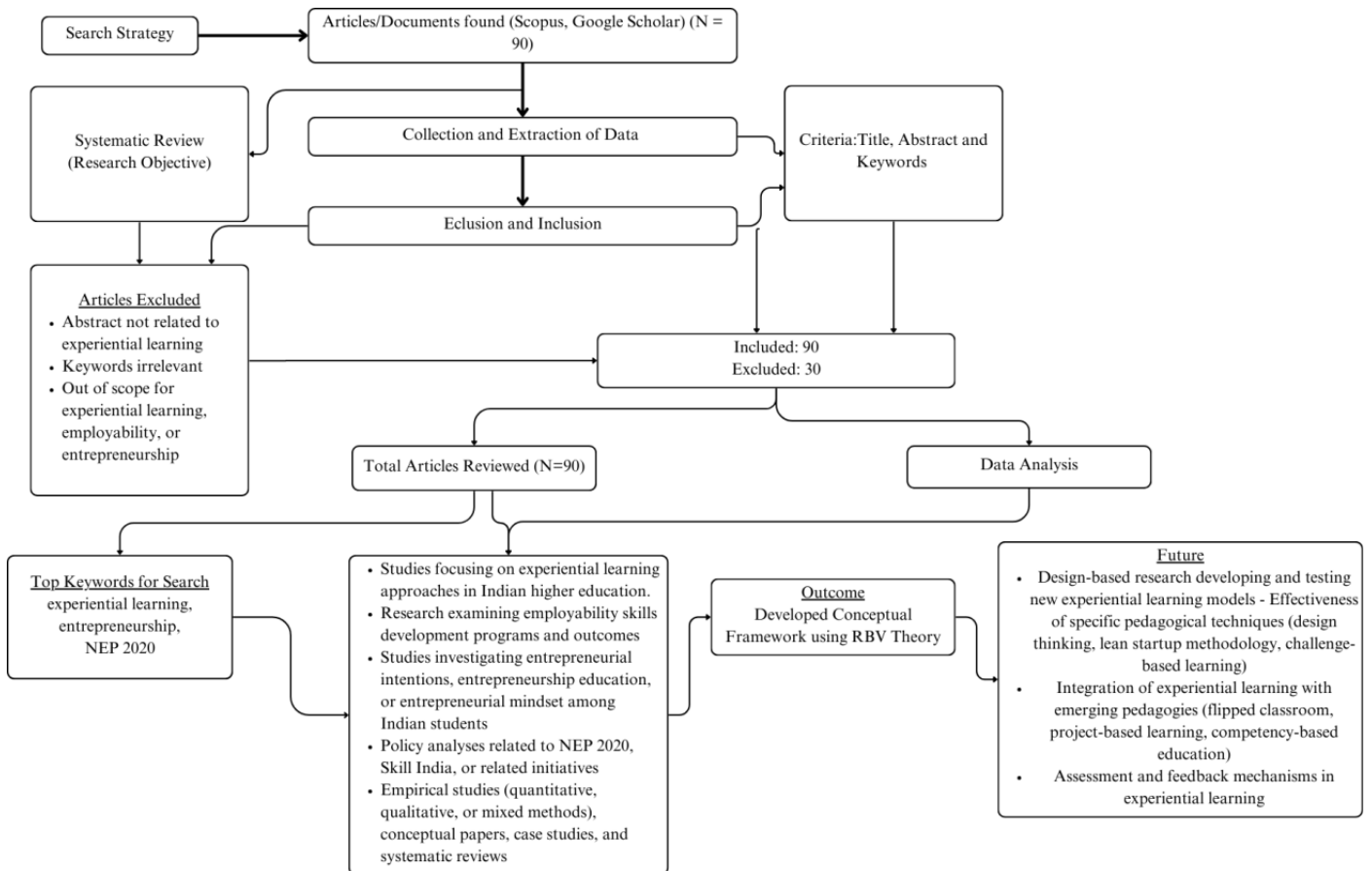


Figure 1. Summary of systematic review methodology.

### 2.1. Search strategy

A comprehensive literature search was conducted across multiple scholarly databases to identify relevant publications on experiential learning, employability, entrepreneurial intentions, and higher education in the Indian context. The search strategy employed three primary sources:

- **SciSpace:** Comprehensive search yielding 60 papers through both paper search and full-text search functionalities.
- **Google Scholar:** Targeted search producing 30 relevant papers.
- **PubMed:** Search conducted but yielded no relevant results for this specific topic domain.

The search employed keywords and Boolean operators, including: “experiential learning,” “employability skills,” “entrepreneurial intentions,” “entrepreneurship education,” “higher education,” “India,” “NEP 2020,” “skill development,” “vocational training,” “industry partnerships,” “internships,” and “live projects.” The Boolean search logic combined thematic clusters using AND/OR connectors to maximize

coverage while maintaining relevance: (experiential learning OR work-integrated learning) AND (employability OR entrepreneurial intention) AND (India OR “Indian higher education” OR NEP 2020). This strategy aligns with the PRISMA guidelines for systematic review transparency and reproducibility [21].

## **2.2. Inclusion and exclusion criteria**

### **Inclusion criteria:**

- Studies focusing on experiential learning approaches in Indian higher education.
- Research examining employability skills development programs and outcomes.
- Studies investigating entrepreneurial intentions, entrepreneurship education, or entrepreneurial mindset among Indian students.
- Policy analyses related to NEP 2020, Skill India, or related initiatives.
- Empirical studies (quantitative, qualitative, or mixed methods), conceptual papers, case studies, and systematic reviews; publications in English.

### **Exclusion criteria:**

- Studies not related to the Indian higher education context.
- Publications focusing exclusively on K-12 education without higher education relevance.
- Studies without clear focus on experiential learning, employability, or entrepreneurship.
- Duplicate publications.

## **2.3. Selection process**

The initial search retrieved 90 total papers across the three databases. Following reduplication and relevance screening based on titles, abstracts, and full-text review where necessary, 30 unique papers were retained for detailed analysis. These papers were then re-ranked based on relevance to the specific research questions using a comprehensive relevance scoring algorithm that considered keyword matches, contextual alignment, and thematic focus. The selection process followed a two-stage screening procedure: an initial abstract-level review eliminated clearly irrelevant papers, while a full-text review applied the inclusion and exclusion criteria more rigorously to borderline cases. Two reviewers independently conducted the screening process, with discrepancies resolved through discussion and consensus, consistent with systematic review best practices [22,23].

## **2.4. Data extraction and analysis**

For the top 30 most relevant papers, detailed data extraction was performed to capture:

- Study methodology and design.
- Key findings and outcomes.
- Policy implications and recommendations.

- Specific experiential learning approaches are examined.
- Employability skills frameworks and measurement.
- Entrepreneurial intention determinants and outcomes.

Thematic analysis was conducted to identify patterns, convergences, and divergences across studies. Synthesis focused on building an integrated understanding of how experiential learning influences both employability and entrepreneurial outcomes in the Indian higher education context. The analytical approach drew on narrative synthesis techniques recommended for reviews combining heterogeneous methodologies, allowing for qualitative comparison of findings across quantitative, qualitative, and conceptual studies [24]. A thematic coding framework was developed iteratively, beginning with deductive codes derived from the research objectives and supplemented by inductive codes emerging from the data (**Table 1**).

**Table 1.** Summary of reviewed studies.

No.	Study	Focus/domain	Sample/context	Methodology	Key findings	Source
1	Shukla et al. (2022)	Entrepreneurship education	Indian HEIs	Review	Uneven penetration; need contextual pedagogy	J. of Entrepreneurship
2	IJFMR (2024)	Start-up readiness	Indian universities	Descriptive review	Institutions crucial for the startup ecosystem	IJFMR
3	Sapovadia et al. (2025)	Skills gap & pedagogy	India	Conceptual	Experiential & industry reforms needed	SSRN
4	Shaligram et al. (2025)	Skill India impact	HEIs	Case study	Improves employability	IJLTEMAS
5	Lekang et al. (2016)	Experiential learning	ICAR students	Survey	Improves practical competence	IJAS
6	Dutta (2025)	Innovation culture	Indian HEIs	Quantitative	Education boosts innovation mindset	EIJMR
7	Chhabra et al. (2021)	Training framework	HEIs	Conceptual	Structured entrepreneurship model	JET
8	Mukesh et al. (2018)	Entrepreneurial potential	India	Empirical	Education affects intention	JOE
9	Srivastava et al. (2017)	Methodologies	HEIs	Conceptual	Active learning enhances outcomes	Springer
10	IJISD (2022)	Live projects	Students	Empirical	Live projects improve employability	IJISD
11	Raghavendra et al. (2024)	Entrepreneurial intentions	University students	Framework	Multiple factors shape intention	Granthaalayah
12	Sharma et al. (2025)	NEP 2020	India	Policy analysis	Shift toward skills & experience	Granthaalayah
13	Patil (2024)	Skill education	India	Conceptual	Boosts employability & growth	IJSREM
14	Taneja et al. (2023)	Experiential learning	Students	SEM	Boosts self-efficacy & intent	Studies in HE
15	Hulugappa (2013)	Trends	India	Review	Identifies structural gaps	Book
16	Sharma et al. (2024)	Future workforce	India	Empirical	Industry-aligned education needed	WLP
17	Jeny et al. (2024)	NEP experiential learning	Kerala	Survey	Improves employability	KUEY
18	Selvaraj (2025)	On-the-job training	Mumbai PG students	Survey	Enhances employability skills	ICTACT
19	Ali et al. (2021)	Experiential learning	HE students	Comparative	Outperforms traditional methods	IJLTER
20	Olalekan (2024)	Entrepreneurial intention	Emerging markets	Quantitative	Strong positive impact	IJMER
21	Kandakatla et al. (2021)	Aatmanirbhar India	India	Policy review	HEIs key for innovation	IEEE
22	Suresh et al. (2022)	Teaching pedagogies	B-School	Empirical	Builds an entrepreneurial mindset	ISSN Journal
23	IJAR (2023)	NEP pedagogy	India	Review	Experiential learning central	IJAR
24	Bernardus et al. (2024)	Experiential programs	Students	Quasi-experimental	Shapes entrepreneurial mindset	AJIS
25	George (2016)	Experiential learning	B-Schools	Conceptual	Improves skills and empathy	JCRM
26	Maheshkumar et al. (2025)	Professors of Practice	India	Evolutionary	Industry experts strengthen learning	IJFMR
27	Acharya et al. (2025)	Classroom to venture	HE	Conceptual	Learning must translate to action	ARSS
28	Rao et al.	Experiential strategies	India	Review	Challenges & opportunities	JIER
29	Saleem et al.	Industry partnerships	HEIs	Model	Boosts employability	JMSS
30	Radhika (2024)	NEP & youth skills	India	Conceptual	Entrepreneurship for youth development	IRJAEM

### **3. Background and theoretical foundations**

#### **3.1. Experiential learning theory**

Experiential learning, rooted in the work of Kolb and other educational theorists, emphasizes learning through direct experience, active experimentation, reflective observation, and abstract conceptualization. In the context of higher education, experiential learning encompasses diverse pedagogical approaches, including internships, apprenticeships, live projects, case studies, business simulations, field trips, workshops, industry visits, and hands-on entrepreneurship programs. The fundamental premise is that students develop deeper understanding, practical competencies, and transferable skills through active engagement with real-world problems and contexts rather than passive reception of theoretical knowledge. The Experiential Learning Cycle—comprising concrete experience, reflective observation, abstract conceptualization, and active experimentation—provides the foundational model upon which most contemporary experiential pedagogy in entrepreneurship and employability is designed [5]. Dewey earlier established the philosophical basis for this tradition by arguing that education must engage learners in experiences that are both interactive and continuous with the broader social environment.

Recent empirical studies further support the effectiveness of experiential learning theory (ELT) in entrepreneurship education. Research examining innovation and entrepreneurship education programs demonstrates that student learning processes closely follow Kolb's experiential learning cycle, where learners engage in concrete experiences, reflect on outcomes, develop conceptual insights, and apply them through experimentation in entrepreneurial contexts [25]. These iterative learning processes strengthen opportunity recognition, problem-solving abilities, and entrepreneurial thinking among university students. Experiential learning approaches, such as incubation programs, startup simulations, and venture creation courses, are particularly effective in shaping entrepreneurial competencies during higher education.

Furthermore, experiential learning environments encourage students to actively participate in collaborative problem-solving activities such as field projects, simulations, and industry engagements. Such pedagogical approaches have been shown to improve cognitive and behavioral competencies, including critical thinking, teamwork, and innovation capabilities, which are essential for both entrepreneurial and professional success [26, 27]. Research by Hmelo-Silver on problem-based learning further supports this, demonstrating that inquiry-driven, experience-centered pedagogies produce deeper conceptual learning and stronger transfer of skills to novel contexts compared to conventional didactic instruction.

#### **3.2. Employability skills framework**

Employability encompasses a set of competencies that enable graduates to secure employment, succeed in their chosen occupations, and adapt to changing labor market demands. Key employability skills identified in the literature include: professionalism, effective communication, social accountability, self-management, data analysis, technology use, problem-solving, teamwork, computational thinking,

and a lifelong learning orientation [10]. These skills extend beyond technical or discipline-specific knowledge to encompass generic competencies valued across diverse employment contexts. The CBI-NUS employability framework and the USAID Employability Framework similarly highlight the centrality of attitudinal and interpersonal competencies alongside technical skills, suggesting that graduate preparation must be holistic rather than narrowly vocational.

Recent research on entrepreneurship and experiential learning programs highlights that active learning approaches significantly contribute to the development of these employability competencies. Students participating in experiential entrepreneurship courses demonstrate improved teamwork, communication, project management, and leadership capabilities through real-world tasks such as business simulations, field projects, and venture creation activities [27]. Employability is not a static attribute but a dynamic capability that must be continuously developed throughout one's career, making lifelong learning orientation a particularly critical graduate outcome in rapidly changing labor markets.

Similarly, studies examining experiential initiatives within entrepreneurial universities reveal that activities such as industry placements, workshops, and collaborative projects help students practice meeting deadlines, organizing work processes, and presenting ideas effectively. These experiential activities contribute to the development of both cognitive skills (critical thinking and problem-solving) and behavioral competencies required in modern workplaces [28]. Harvey identifies a paradox in employability research: while employers consistently rank generic skills over academic credentials, higher education curricula remain disproportionately oriented toward content knowledge transmission. Experiential learning approaches directly address this paradox by embedding skill development within authentic work-relevant contexts.

### **3.3. Theory of planned behavior and entrepreneurial intentions**

Entrepreneurial intention—the conscious state of mind that directs attention and action toward starting a new venture—is theoretically grounded in the Theory of Planned Behavior [29]. This framework posits that intentions are influenced by three primary factors: attitude toward the behavior, subjective norms, and perceived behavioral control (self-efficacy) [26, 30]. In the educational context, entrepreneurial intentions are shaped by individual factors (self-efficacy, achievement motivation, risk-taking propensity), contextual factors (social capital, cultural influences, gender roles), and educational factors (curriculum design, pedagogical approaches, institutional support) [31]. The Theory of Planned Behavior to entrepreneurship, demonstrating that entrepreneurial intentions are the single best predictor of venture creation behavior, lending theoretical weight to the importance of measuring and developing these intentions through educational interventions [32]. Further developed and validated a standardized Entrepreneurial Intention Questionnaire (EIQ) that has been widely applied in cross-cultural contexts [33], including several Indian studies reviewed here.

### **3.4. Integration framework**

The integration of experiential learning with employability and entrepreneurship development is theoretically grounded in the recognition that both employment readiness and entrepreneurial capacity require practical competencies, self-efficacy, and real-world problem-solving experience. Experiential learning serves as a pedagogical mechanism that simultaneously develops employability skills (through exposure to workplace contexts and professional practices) and entrepreneurial competencies (through hands-on venture creation, innovation challenges, and business problem-solving) [34, 35]. Integrating these domains within a unified curriculum framework reflects the broader movement toward “entrepreneurial universities” as described by Clark and later elaborated, wherein universities assume a proactive role in economic and social development beyond traditional teaching and research functions [4].

Research on entrepreneurial universities indicates that embedding experiential learning across multiple courses and programs, rather than limiting it to isolated modules, significantly enhances both employability outcomes and entrepreneurial capability among students. Institutions that systematically integrate experiential initiatives into curricula create environments that promote innovation, industry engagement, and entrepreneurial thinking [28]. Universities with strong entrepreneurial cultures—characterized by proactive industry linkages, innovative pedagogy, and institutional support for student ventures—produce graduates with significantly higher entrepreneurial activity rates and stronger employment outcomes.

Consequently, experiential learning can be viewed as a strategic educational framework that links academic knowledge with real-world application, enabling universities to simultaneously address graduate employability challenges and foster entrepreneurial ecosystems within higher education systems [36]. This integration is also consistent with the resource-based view of human capital development [37], which holds that investments in practical, transferable skills yield long-term returns for both individuals and national economies. The dual-purpose nature of experiential learning—simultaneously building employment readiness and entrepreneurial capability—makes it particularly valuable in resource-constrained developing economies, where educational investments must be optimally leveraged.

## **4. Thematic analysis of experiential learning approaches in India**

### **4.1. Types of experiential learning interventions**

The literature reveals diverse experiential learning approaches implemented across Indian higher education institutions:

#### **4.1.1. Internships and industrial training**

Internships and the Students Industrial Work Experience Scheme (SIWES) emerge as robust drivers of both employability and entrepreneurial intention [38]. On-the-job training (OJT) has been found to enhance specific employability skills among postgraduate students, improving job readiness and career outcomes, though challenges such as limited guidance and workload management persist [39]. The effectiveness of internships as an experiential modality is well-documented internationally. Structured

internships with clear learning objectives and mentoring significantly outperformed unstructured work placements in terms of skill development. In the Indian context, the introduction of mandatory internship requirements under NEP 2020 represents a significant policy lever for scaling this intervention nationwide.

#### **4.1.2. Live projects**

Learning through live projects demonstrates a significant relationship with sustainable employability, directly influencing professionalism, effective communication, social accountability, self-management, data analysis, and technology use skills. A study of 454 students nationwide confirmed these positive impacts. Live projects offer the distinctive advantage of embedding students within real organizational challenges, thereby providing authenticity that simulations and case studies cannot fully replicate. This authenticity has been shown to heighten student motivation, deepen learning, and produce more transferable competencies [40,41].

#### **4.1.3. Case studies and business simulations**

Management education programs increasingly incorporate case studies, business simulations, and field trips as experiential learning components to enhance practical skills and job readiness [11]. Emphasizes that meaningful education emerges through continuous interaction between individuals and their environment, where learning develops through reflective experiences [42]. Evidence from entrepreneurship education research indicates that simulations and experiential exercises promote the development of soft skills such as leadership, collaboration, and adaptability. These competencies are essential for navigating uncertain entrepreneurial environments and dynamic labor markets [27]. The Harvard Business School case method, widely adopted in Indian management institutions, exemplifies the pedagogical integration of real-world complexity into classroom learning, though critics note that case-based learning lacks the physical and social immersion of authentic workplace experience [43,44].

#### **4.1.4. Entrepreneurship programs**

Specialized experiential-entrepreneurial learning methods show significantly greater impact on entrepreneurial intentions compared to traditional teaching approaches. A quasi-experimental study found significant mean differences in entrepreneurial intention and its antecedents between experiential and traditional methods [30]. Further report in a meta-analysis that entrepreneurship education incorporating experiential components yields effect sizes on entrepreneurial interest significantly higher than lecture-based delivery, supporting the conclusion that pedagogical approach—not merely content exposure—is the decisive variable in shaping entrepreneurial outcomes [45].

#### **4.1.5. Agricultural extension programs**

In specialized domains such as agricultural education, the Experiential Learning Programmers of the Indian Council of Agricultural Research were perceived as useful by students and teachers for imparting entrepreneurial skills and competencies, though they showed limited success in motivating graduates toward self-employment [46]. However, scholars argue that the effectiveness of such programs depends on the

integration of mentorship support, financial resources, and industry linkages that allow students to translate entrepreneurial learning into viable business ventures. Without supportive ecosystems, experiential learning outcomes may remain limited to skill development rather than actual enterprise creation [36]. This gap between skill acquisition and enterprise creation is a recurring theme in the literature, reflecting the systemic constraints—including access to finance, market linkages, and social capital—that moderate the translation of entrepreneurial intentions into behavior.

#### **4.2. Pedagogical components of effective experiential learning**

Analysis of effective entrepreneurship education and training regimes in Indian higher education identified five critical themes [34].

- 1. Incremental pedagogical efficiency and flexible evaluation systems:** Moving beyond rigid assessment frameworks to accommodate diverse learning pathways and outcomes. Flexible evaluation allows students to demonstrate competency through portfolios, project outcomes, and reflective journals rather than purely examination-based measures, consistent with authentic assessment principles [47].
- 2. Entrepreneurial experience of faculty:** Faculty with direct entrepreneurial experience bring authenticity and practical insights to teaching. Studies consistently show that students rate entrepreneurship courses more positively and demonstrate stronger entrepreneurial competencies when taught by instructors with real-world venture experience [48,49]
- 3. Extended support:** Comprehensive support systems, including mentoring, funding access, and incubation facilities. The availability of institutional support mechanisms beyond the classroom—including business plan competitions, startup incubators, and alumni mentoring networks—has been identified as a key differentiator between institutions with high and low graduate entrepreneurship rates [50].
- 4. Holistic mentoring:** Mentoring that addresses not only technical aspects but also psychological, social, and strategic dimensions of entrepreneurship. Effective mentoring relationships provide emotional support alongside knowledge transfer, helping students manage the uncertainty and setbacks inherent in entrepreneurial processes [51].
- 5. Experiential learning:** Direct engagement with entrepreneurial activities, venture creation, and real-world business challenges.

#### **4.3. Institutional models and case studies**

The Skill India initiative has significantly contributed to fostering an entrepreneurial culture in higher education institutions, leading to increased student participation and successful start-ups. However, implementation challenges include inadequate funding, limited industry exposure, and the need for more inclusive approaches [52]. Comparative case studies of Indian universities reveal substantial variation in the extent and quality of entrepreneurship education infrastructure,

with only 54.7% of surveyed students reporting that their institutions provided entrepreneurship courses. Internationally, institutions such as MIT, Stanford, and Babson College demonstrate that systematic integration of entrepreneurship education with strong industry ecosystems and alumni networks can dramatically improve graduate entrepreneurship rates—models that Indian institutions are increasingly seeking to adapt [53].

#### **4.4. Challenges in implementation**

Management teachers in Kerala identified diverse challenges in incorporating experiential learning within the NEP 2020 framework, highlighting the need for institutional support and policy adjustments to facilitate effective implementation [11]. These challenges include resource constraints, faculty preparedness, industry partnership development, and alignment of experiential components with traditional assessment and accreditation requirements. Structural barriers such as faculty resistance to pedagogical change, inadequate laboratory and incubation infrastructure, and the absence of standardized frameworks for assessing experiential learning outcomes represent systemic obstacles that policy interventions must directly address [6, 54]. The National Assessment and Accreditation Council (NAAC) and the National Board of Accreditation (NBA) play important roles in incentivizing experiential learning integration through their accreditation criteria, though critics argue that current frameworks do not adequately reward innovative pedagogy [55].

### **5. Employability skills development frameworks**

#### **5.1. NEP 2020 and skill-based education**

The National Education Policy 2020 represents a comprehensive framework for embedding skill development across all levels of education. NEP 2020's skill education strategies, including vocational training and experiential learning, have been identified as effective mechanisms for enhancing graduate employability [56]. The policy emphasizes lifelong learning, adaptability, and alignment of educational outcomes with industry requirements, preparing students for a dynamic job market and contributing to India's economic development. The policy's emphasis on multidisciplinary education and flexible credit frameworks also creates structural opportunities for embedding experiential learning components across degree programs, reducing the siloed nature of traditional disciplinary curricula [13,57].

The policy envisions skill-based experiential learning as a transformative approach that integrates practical competencies with theoretical knowledge from schools through higher education institutions [9]. This vision aligns with the broader goal of preparing India's youth for the demands of a 21st-century economy characterized by rapid technological change, globalization, and evolving employment patterns. Recent empirical studies also highlight that experiential learning initiatives—such as internships, entrepreneurial projects, and industry engagement activities—significantly strengthen students' professional competencies and career readiness. Structured experiential programs allow students to apply theoretical

knowledge in real-world contexts, thereby improving practical skills and increasing their confidence in professional environments [38]. Furthermore, research examining experiential entrepreneurship education indicates that exposure to project-based and experiential learning environments helps students develop innovation capability, leadership skills, and opportunity recognition abilities—competencies increasingly considered essential for employability in knowledge-based economies [58].

## **5.2. Work-integrated learning (WIL)**

Work-Integrated Learning emerges as a critical framework for improving employability, career development, and pre-professional identity formation. WIL encompasses structured programs that integrate academic learning with workplace experience, including cooperative education, internships, practicum placements, and industry-sponsored projects [10]. The effectiveness of WIL depends on the quality of industry partnerships, the alignment between academic objectives and workplace learning opportunities, and the provision of adequate support and reflection mechanisms for students. International evidence from Australian, Canadian, and UK universities demonstrates that graduates with WIL experience secure employment at significantly higher rates and command stronger starting salaries than peers without such experience [59]. The WIL framework also explicitly recognizes the importance of structured reflection, distinguishing it from mere work experience by ensuring that students cognitively process workplace encounters in relation to academic learning outcomes [60].

## **5.3. Competency-based education**

Competency-based education, emphasized in NEP 2020, shifts the focus from content coverage to demonstrated mastery of specific skills and competencies. This approach aligns assessment with employability outcomes, enabling students to progress based on skill acquisition rather than time-based progression. The framework requires clear articulation of learning outcomes, authentic assessment methods, and flexible pathways that accommodate diverse learner needs and career trajectories [56]. The competency-based education movement draws heavily on the work of educational systems must be redesigned around exit outcomes rather than input delivery. In the Indian context, competency-based approaches face the challenge of translating international frameworks into culturally relevant competency maps that reflect the diversity of India's labor markets and the varied aspirations of its student population [12].

## **5.4. Employability outcomes**

Empirical evidence demonstrates positive relationships between experiential learning interventions and employability outcomes. Live projects directly influence multiple dimensions of employability, including professionalism, communication effectiveness, social accountability, self-management capabilities, data analysis skills, and technology utilization. On-the-job training enhances job readiness and career outcomes among postgraduate students across management, engineering, and

arts disciplines [39]. These findings suggest that structured experiential learning, when properly designed and implemented, serves as an effective mechanism for employability enhancement. Moreover, meta-analytic evidence suggests that entrepreneurship education programs incorporating experiential learning methods significantly enhance students' entrepreneurial interest, self-efficacy, and career aspirations toward innovation-driven professions [7, 45]. A longitudinal study demonstrates that entrepreneurship programs with strong experiential components show lasting effects on entrepreneurial attitudes and intentions two years post-intervention, suggesting durability of outcomes beyond the immediate educational context.

### **5.5. Industry-academia collaboration**

Effective employability skills development requires robust industry-academia collaboration. However, limited industry-academia collaboration has been identified as a systemic challenge in Indian higher education. Strengthening these partnerships through formal mechanisms, shared governance structures, and mutually beneficial engagement models is essential for ensuring that experiential learning opportunities are relevant, accessible, and aligned with evolving industry requirements. Empirical studies demonstrate that partnerships between universities and industry organizations create valuable opportunities for students to gain practical exposure through internships, mentorship programs, and collaborative innovation projects. These initiatives not only enhance students' employability but also strengthen university–industry knowledge transfer and innovation ecosystems. The NASSCOM-academia collaboration model in the Indian IT sector represents a noteworthy example of industry-led curriculum co-design that has demonstrably improved graduate employment rates within the sector [61].

## **6. Entrepreneurial intentions and education programs**

### **6.1. Determinants of entrepreneurial intentions**

Research on entrepreneurial intentions among Indian university students reveals a complex interplay of individual, contextual, and educational factors [31].

#### **6.1.1. Individual factors**

Self-efficacy, achievement motivation, and risk-taking propensity emerge as crucial individual determinants. A strong correlation exists between elevated self-efficacy and heightened entrepreneurial intention. These psychological attributes influence students' confidence in their ability to successfully launch and manage entrepreneurial ventures. Social cognitive theory provides the theoretical basis for understanding self-efficacy as a learned capability shaped by mastery experiences, vicarious learning, social persuasion, and physiological states—all of which can be deliberately cultivated through well-designed experiential learning programs [19].

#### **6.1.2. Contextual factors**

Social capital, cultural influences, and gender roles play vital contextual roles in shaping entrepreneurial aspirations. The social and cultural environment in

which students are embedded influences their perception of entrepreneurship as a viable and desirable career path. The cultural dimensions framework has been applied to explain cross-national variation in entrepreneurial intention, with collectivist cultural orientations—prevalent in many Indian communities—sometimes dampening individual risk-taking but also providing social network resources that can support entrepreneurial ventures [62]. The socio-cultural environment plays an important role in shaping entrepreneurial intentions by influencing individuals' confidence, risk-taking ability, and entrepreneurial attitudes [63].

### **6.1.3. Educational factors**

Structured entrepreneurship education, university support systems, and sustainability awareness significantly enhance entrepreneurial intentions. The quality, comprehensiveness, and experiential nature of entrepreneurship education directly influence students' inclination toward entrepreneurial careers. The design of entrepreneurship courses—including pedagogical approach, instructor credibility, and alignment with students' prior beliefs—moderates the effectiveness of entrepreneurship education on intention formation [8,33].

## **6.2. Impact of experiential learning on entrepreneurial intentions**

Quantitative evidence demonstrates that experiential learning positively influences entrepreneurial intention with a direct effect ( $\beta = 0.042$ ). Critically, entrepreneurial self-efficacy mediates and substantially enhances this relationship ( $\beta = 0.090$ , calculated as  $0.697 \times 0.130$ ). Entrepreneurial attitude exerts a strong direct influence on entrepreneurial intention ( $\beta = 0.872$ ). Collectively, experiential learning, entrepreneurial self-efficacy, and entrepreneurial attitude explain 89.6% of the variations in entrepreneurial intention among 669 Indian students enrolled in entrepreneurial courses across Punjab, Haryana, and the National Capital Region [26]. These findings underscore that while experiential learning has a positive direct effect, its impact is substantially amplified through the development of entrepreneurial self-efficacy. This suggests that experiential learning interventions should explicitly focus on building students' confidence in their entrepreneurial capabilities through successful completion of progressively challenging entrepreneurial tasks. Similarly, project-based entrepreneurship education initiatives that involve students in real entrepreneurial projects—such as organizing entrepreneurial events or managing startup simulations—have been shown to significantly strengthen entrepreneurial competencies and intentions during early career stages [64]. Cross-sectional study demonstrating that exposure to entrepreneurship education with experiential components is a significant predictor of entrepreneurial intention, even after controlling for individual personality traits.

## **6.3. Entrepreneurship education pedagogies**

A survey of 157 respondents across Indian institutions explored entrepreneurship education pedagogies, target groups, module types, support mechanisms, and outcome measurement approaches [65]. The findings reveal diversity in pedagogical approaches but also highlight the need for greater standardization and evidence-based practice

in entrepreneurship education delivery. Pedagogical tools identified as effective for developing entrepreneurial intentions include role modeling, hands-on experience, incubation support, and mentoring [35]. These approaches move beyond traditional classroom instruction to provide students with direct exposure to entrepreneurial role models, opportunities to engage in venture creation activities, access to incubation facilities and resources, and personalized guidance from experienced entrepreneurs and mentors. Entrepreneurship pedagogy must target the cognitive scripts and heuristics that entrepreneurs use, requiring experiential approaches that expose students to the iterative, uncertainty-laden nature of venture creation rather than simplified linear models. The lean startup methodology and design thinking framework represent pedagogical innovations that have been increasingly adopted in Indian entrepreneurship education to provide students with structured yet adaptive frameworks for navigating entrepreneurial uncertainty [66,67].

#### **6.4. Entrepreneurship ecosystem development**

While 80% of faculty in a study of 200 participants from 10 Indian universities confirmed the presence of structured entrepreneurship courses, student perception was notably lower. Less than 50% of students confirmed active mentorship or startup funding support, revealing critical gaps in the entrepreneurship ecosystem [68]. This disconnect between institutional claims and student experiences highlights implementation challenges in translating policy commitments into accessible support structures.

The development of comprehensive entrepreneurship ecosystems within universities requires integration of multiple components: curriculum design, experiential learning opportunities, mentorship networks, funding access (seed funding, angel investment connections), incubation facilities, industry partnerships, and alumni entrepreneur networks [52]. The Entrepreneurship Ecosystem Framework provides a useful conceptual lens for understanding these interdependencies, identifying domains of finance, culture, markets, human capital, support institutions, and policy as collectively necessary for a functioning entrepreneurship ecosystem—a diagnosis that Indian higher education institutions are beginning to apply in self-assessment exercises.

#### **6.5. Entrepreneurial mindset development**

Beyond specific venture creation skills, entrepreneurship education aims to develop an entrepreneurial mindset characterized by opportunity recognition, innovation orientation, calculated risk-taking, resilience, and proactive problem-solving. Pioneering teaching pedagogies in business schools have been employed to foster this entrepreneurial mindset, though empirical evidence on long-term mindset development outcomes remains limited [69]. The entrepreneurial mindset as a habitual way of thinking characterized by a passionate pursuit of opportunity, disciplined risk management, and continuous adaptation—qualities that are arguably more important than specific technical skills for long-term entrepreneurial success. Developing such a mindset requires sustained exposure

to entrepreneurial challenges over an extended period rather than discrete course interventions, suggesting the importance of integrating entrepreneurship-oriented learning experiences throughout the degree program rather than confining them to elective modules [70].

## **7. Integration of experiential learning with employability and entrepreneurship**

### **7.1. Conceptual integration framework**

The integration of experiential learning with employability and entrepreneurship development is grounded in the recognition that both domains require overlapping competencies: practical problem-solving skills, self-efficacy, adaptability, communication effectiveness, teamwork, and real-world application of knowledge. Experiential learning serves as a pedagogical bridge that simultaneously develops employment readiness and entrepreneurial capacity [10,34].

A proposed model for increasing employability through industry partnerships and practical learning emphasizes the synergistic relationship between workplace exposure, skill development, and career readiness [71]. Similarly, entrepreneurship education frameworks that incorporate experiential components demonstrate enhanced outcomes in both entrepreneurial intention and employability indicators. This integration through the concept of “value creation pedagogy,” wherein students create real value for real people through entrepreneurial activities, simultaneously developing employability competencies and entrepreneurial capabilities within a unified educational framework [16].

### **7.2. Dual outcomes of experiential learning**

Empirical evidence demonstrates that experiential learning interventions produce dual outcomes:

- 1. Employability enhancement:** Through the development of professional competencies, workplace socialization, industry network building, and practical skill application (Impact of learning through live projects on sustainable employability generation, [39]).
- 2. Entrepreneurial capacity building:** Through exposure to business challenges, development of entrepreneurial self-efficacy, opportunity recognition skills, and venture creation experience [26,38].

This dual-outcome potential makes experiential learning a particularly valuable pedagogical approach in resource-constrained environments where educational interventions must serve multiple objectives simultaneously. Psychological capital—comprising self-efficacy, optimism, hope, and resilience—is the common currency underlying both employability and entrepreneurship, and that experiential learning systematically builds this psychological capital through challenge, feedback, and mastery. The dual-outcome framework also provides a compelling argument for mainstreaming experiential learning across all disciplines rather than restricting

it to business and engineering faculties, given that graduate employability and entrepreneurship are universal concerns across the liberal arts, sciences, and social sciences [72].

### **7.3. Mediating role of self-efficacy**

Self-efficacy emerges as a critical mediating variable linking experiential learning to both employability and entrepreneurial outcomes. Successful completion of experiential learning activities builds students' confidence in their capabilities, which in turn influences their willingness to pursue challenging career paths, including entrepreneurship [26]. This mediating mechanism suggests that experiential learning design should incorporate progressive skill-building, opportunities for success experiences, constructive feedback, and reflection on capability development. Four principal sources of self-efficacy: enactive mastery experiences (direct success in tasks), vicarious learning (observing similar others succeed), verbal persuasion (encouragement from credible others), and physiological arousal management [19]. Well-designed experiential learning programs can deliberately activate all four sources simultaneously, making them particularly potent self-efficacy development interventions. Empirically confirm that entrepreneurial self-efficacy is a strong predictor of entrepreneurial intentions, and that it can be developed through entrepreneurship education—findings that underscore the practical importance of embedding self-efficacy development as an explicit objective in experiential learning program design [73].

### **7.4. Curriculum design implications**

Effective integration requires curriculum design that explicitly connects experiential learning activities to both employability and entrepreneurship learning outcomes, including:

1. Structured reflection activities that help students identify transferable skills developed through experiential learning.
2. Assessment approaches that evaluate both employment-related competencies and entrepreneurial capabilities.
3. Integration of entrepreneurship content within discipline-specific experiential learning activities.
4. Progression from guided experiential activities to increasingly autonomous entrepreneurial projects.

The constructive alignment principle offers a useful design heuristic: curriculum architects should ensure that learning activities, assessment tasks, and intended outcomes are mutually reinforcing. In the context of experiential learning for employability and entrepreneurship, this principle implies that assessment must move beyond conventional examinations to incorporate portfolio evidence, peer evaluations, industry assessments, and reflective journals that capture the range of competencies developed through experiential engagement [74].

## 7.5. Institutional infrastructure requirements

Successful integration demands institutional infrastructure that supports both employability and entrepreneurship objectives: career services that address both employment and venture creation pathways, industry partnerships that provide both internship opportunities and entrepreneurial mentorship, funding mechanisms that support both student professional development and startup initiatives, and faculty development that builds capacity for facilitating both employability and entrepreneurship learning [34, 68]. Internationally benchmarked models such as the Co-operative Education program at the University of Waterloo (Canada) and the Graduate School of Education's entrepreneurship programs at Stanford demonstrate that sustained institutional commitment—reflected in dedicated staffing, budgetary allocation, and strategic planning—is the decisive factor in the long-term success of integrated experiential learning ecosystems [75].

## 8. Policy implications and recommendations

### 8.1. National policy framework: NEP 2020 implementation

The National Education Policy 2020 provides a comprehensive framework for transforming Indian higher education through emphasis on experiential learning, skill development, and entrepreneurship education [9, 56]. However, effective implementation requires:

1. **Institutional capacity building:** Universities and colleges require substantial capacity building to translate policy vision into operational reality. This includes faculty development, infrastructure investment, curriculum redesign, and the establishment of industry partnership mechanisms.
2. **Resource allocation:** Adequate funding must be allocated for experiential learning infrastructure, including laboratories, incubation centers, industry collaboration programs, and student support services. The challenge of inadequate funding has been identified as a significant barrier to effective entrepreneurship program implementation [52].
3. **Monitoring and evaluation:** Robust monitoring and evaluation frameworks are needed to assess implementation progress, identify challenges, and enable evidence-based policy refinement. Current outcome measurement approaches for entrepreneurship education vary widely and lack standardization [65]. The University Grants Commission (UGC) and NAAC should develop standardized indicators for measuring experiential learning integration, drawing on international frameworks such as the European Quality Improvement System (EQUIS) criteria for entrepreneurial education [55].

### 8.2. Entrepreneurship education ecosystem development

Policymakers and educational institutions should establish supportive environments that enhance self-efficacy, promote social capital, and provide comprehensive entrepreneurship education [31]. Specific recommendations include:

1. **Structured entrepreneurship curriculum:** All higher education institutions should offer structured entrepreneurship courses as core or elective components, moving beyond the current situation where only 54.7% of students report access to such courses. These courses should be designed around experiential principles, incorporating business plan competitions, prototype development, market testing, and peer-to-peer learning communities.
2. **Mentorship infrastructure:** Less than 50% of students currently confirm access to active mentorship or startup funding support [68]. Establishing formal mentorship programs connecting students with experienced entrepreneurs, alumni, and industry professionals is essential. The National Mentorship Mission proposed under NEP 2020 provides a policy framework for scaling mentorship at the national level, and its implementation in entrepreneurship education contexts warrants priority attention.
3. **Startup funding mechanisms:** Creating institutional start-up funds available to graduates on a loan or equity basis can address the critical gap between entrepreneurial education and actual venture creation [46]. BIRAC (Biotechnology Industry Research Assistance Council) and DST's NIDHI (National Initiative for Developing and Harnessing Innovations) programs provide models for state-supported seed funding that could be more systematically linked to university entrepreneurship ecosystems.
4. **Incubation facilities:** Universities should establish or strengthen incubation centers that provide physical space, business development support, networking opportunities, and access to investors for student and alumni entrepreneurs.

### 8.3. Faculty development and entrepreneurial experience

The entrepreneurial experience of faculty emerges as a critical factor in effective entrepreneurship education [34]. Policy initiatives should:

1. Encourage and facilitate faculty engagement in entrepreneurial activities, consulting, and industry partnerships.
2. Recruit “professors of practice” with direct entrepreneurial and industry experience to complement traditional academic faculty [76].
3. Provide professional development opportunities for faculty to develop competencies in experiential pedagogy, entrepreneurship education, and industry collaboration. Programs such as the AICTE-sponsored Faculty Development Programs and the UGC-HRDC workshops provide existing institutional channels that could be enhanced with entrepreneurship pedagogy content (UGC, AICTE).
4. Recognize and reward faculty contributions to experiential learning and entrepreneurship education in promotion and tenure decisions.

### 8.4. Industry-academia collaboration frameworks

Addressing the challenge of limited industry-academia collaboration requires:

1. **Formal partnership mechanisms:** Establishment of formal structures for industry engagement, including advisory boards, collaborative research centers,

and joint curriculum development initiatives.

2. **Incentive structures:** Creating incentives for industry participation through tax benefits, recognition programs, and access to university research and talent pipelines.
3. **Quality assurance:** Ensuring that industry partnerships provide meaningful learning experiences rather than exploitative labor through clear learning agreements, supervision requirements, and outcome assessment.
4. **Scalability models:** Developing scalable models for industry engagement that can accommodate large student populations, particularly in resource-constrained institutions.

### **8.5. Addressing equity and inclusion**

Gender-specific obstacles and the need for diversity in entrepreneurship education have been identified as critical concerns [31]. Equity and inclusion are essential to ensure that experiential learning opportunities are accessible to all students, regardless of socio-economic background or institutional disparities. Prior research indicates that inclusive program structures, financial assistance, and fair access to internship opportunities play a crucial role in improving participation rates and learning outcomes [55]. Policy recommendations include:

1. Targeted programs to encourage and support women entrepreneurs in higher education.
2. Addressing cultural and social barriers that disproportionately affect certain demographic groups.
3. Ensuring that experiential learning opportunities are accessible to students from diverse socioeconomic backgrounds.
4. Creating inclusive entrepreneurship ecosystems that value diverse forms of entrepreneurship, including social entrepreneurship and rural entrepreneurship.

### **8.6. Skill India and vocational integration**

The Skill India initiative's impact on higher education institutions demonstrates potential for fostering an entrepreneurial culture, but challenges persist [52]. The integration of vocational education with experiential learning is crucial for enhancing employability and aligning higher education with industry needs in India. Initiatives such as the Skill India Mission and the National Education Policy 2020 emphasize the importance of skill development, internships, and hands-on training within academic programs.

Recommendations include:

1. Strengthening integration between Skill India programs and higher education curricula.
2. Ensuring that vocational training components are valued and recognized within academic degree programs.
3. Addressing the stigma associated with vocational education through awareness campaigns and success story dissemination.

4. Creating pathways for students to combine academic credentials with industry-recognized skill certifications.

### **8.7. Regional and institutional contextualization**

Policy implementation must account for regional diversity and institutional variation across India's vast higher education landscape. Regional and institutional contextualization is essential to ensure that experiential learning initiatives are effectively adapted to diverse educational settings across India. Evidence suggests that variations in infrastructure, faculty capacity, and industry exposure significantly influence the implementation and outcomes of such programs [55]. Recommendations include:

1. Flexible implementation frameworks that allow institutions to adapt national policies to local contexts.
2. Differentiated support based on institutional capacity and resource availability.
3. Regional entrepreneurship hubs that leverage local industry strengths and cultural contexts.
4. Documentation and dissemination of successful institutional models and best practices.

## **9. Gaps in current research**

### **9.1. Longitudinal outcome studies**

The majority of existing studies employ cross-sectional designs that capture intentions, perceptions, or short-term outcomes. There is a critical need for longitudinal research that tracks students from experiential learning participation through career outcomes, including employment rates and job quality, actual venture creation rates, long-term persistence and success of student-initiated ventures, and evolution of entrepreneurial intentions and career choices over time. This gap is consistent with broader critiques of entrepreneurship education [7], who conducted a comprehensive review finding that fewer than 10% of studies measured outcomes beyond the classroom, and fewer than 3% assessed long-term behavioral outcomes such as actual venture creation.

### **9.2. Comparative effectiveness studies**

Limited research compares the effectiveness of different experiential learning approaches, including comparative analysis of internships, live projects, simulations, and other experiential modalities; optimal duration, intensity, and sequencing of experiential learning interventions; cost-effectiveness analysis; and identification of which approaches are most effective for different student populations and learning objectives. Meta-analytic methods are urgently needed in entrepreneurship education research to synthesize across studies and identify the most potent intervention components—a methodological agenda that the Indian research community should actively pursue [77].

### **9.3. Mechanism and process research**

While correlation evidence demonstrates relationships between experiential learning and outcomes, the mechanisms through which these effects occur require deeper investigation, including detailed process studies, the role of reflection, feedback, and mentoring, psychological and social mechanisms linking experiential learning to career choices, and threshold effects and optimal dosage of experiential learning. Cognitive and neurological research on learning through experience—including work on situated cognition and embodied learning—offers theoretical resources for explaining the mechanisms of experiential learning that remain underutilized in entrepreneurship education research [78,79].

### **9.4. Faculty perspectives and capacity**

Research on faculty experiences, challenges, and capacity needs for implementing experiential learning is limited [11]. Needed research includes faculty perceptions of barriers and enablers, effective faculty development models, the impact of faculty entrepreneurial experience on student outcomes, and workload and resource implications. Entrepreneurship educators face a distinctive pedagogical challenge: teaching students to manage uncertainty and ambiguity in ways that are fundamentally different from knowledge-transmission teaching, requiring a fundamental reimagination of the faculty role that is rarely supported by existing professional development programs.

### **9.5. Equity and access**

Research examining differential access to and outcomes from experiential learning across demographic groups is scarce, including gender differences, socioeconomic barriers, regional disparities, and the effectiveness of equity-promoting interventions. The gender gap in entrepreneurship is well-documented internationally, but research specifically examining how Indian higher education institutions can design experiential learning programs to close this gap remains limited and constitutes a significant research priority [80].

### **9.6. Industry perspectives**

The literature predominantly reflects academic and student perspectives, with limited research on industry motivations, benefits, and challenges in experiential learning partnerships; industry perceptions of graduate preparedness; effective engagement models; and scalability and sustainability of industry partnerships [81]. Qualitative research involving industry stakeholders is particularly needed to understand the organizational incentives and constraints that shape industry engagement with universities, and to co-design partnership models that are mutually beneficial rather than extractive. Multiple channels of knowledge transfer in university-industry partnerships—including collaborative research, consultancy, graduate recruitment, and joint training programs—suggest that robust industry-academia ecosystems are multidimensional and require deliberate institutional design [82].

## **9.7. Policy implementation and impact**

While policy frameworks like NEP 2020 are well-documented, research on implementation processes and impacts is limited, including implementation challenges and success factors, impact on institutional practices and student outcomes, unintended consequences, and comparative analysis across Indian states. Implementation science frameworks offer systematic approaches to studying how educational innovations are adopted, adapted, and sustained within complex institutional environments, and applying these frameworks to the implementation of the NEP 2020 would significantly strengthen the evidence base for policy refinement [83].

## **9.8. Measurement and assessment**

Standardized, validated instruments for measuring experiential learning quality, employability skills, and entrepreneurial competencies in the Indian context are needed, including context-appropriate assessment tools, standardized metrics for comparing outcomes across institutions, methods capturing both cognitive and non-cognitive outcomes, and approaches for assessing entrepreneurial mindset beyond intentions. The development of a validated Indian Experiential Learning Quality Index (IELQI) could provide a standardized benchmarking tool that allows institutions to assess and improve their experiential learning programs in a systematic, evidence-based manner.

## **10. Future research directions**

### **10.1. Integrated theoretical models**

Future research should develop and test integrated theoretical models explaining complex relationships among experiential learning, employability, entrepreneurial intentions, and actual career outcomes. These models should incorporate individual, contextual, and educational factors; account for mediating and moderating variables; explain both employment and entrepreneurship pathways; and be grounded in Indian cultural and institutional contexts. Opportunity recognition framework and planned behavior theory offer complementary theoretical foundations that could be synthesized into a unified model of experiential learning's impact on graduate outcomes [29,84].

### **10.2. Technology-enhanced experiential learning**

The role of technology in scaling and enhancing experiential learning warrants investigation, including virtual internships and remote experiential learning modalities, simulation technologies and their effectiveness, online platforms connecting students with opportunities, and artificial intelligence and adaptive learning. The COVID-19 pandemic accelerated the adoption of virtual experiential learning, creating a natural experiment in online delivery that offers rich data for understanding the boundary conditions of experiential pedagogy [85,86]. Comparative studies of in-person versus virtual experiential learning contexts are urgently needed to inform post-pandemic pedagogical design decisions.

### **10.3. Interdisciplinary approaches**

Experiential learning, employability, and entrepreneurship span multiple disciplines. Future research should examine disciplinary differences in experiential learning approaches, interdisciplinary experiential learning models, the role of liberal arts and humanities in developing entrepreneurial mindsets, and how disciplinary cultures influence implementation.

### **10.4. Social and rural entrepreneurship**

Most existing research focuses on technology and business entrepreneurship. Future research should examine experiential learning for social entrepreneurship, rural entrepreneurship, and higher education's role in rural development, agricultural entrepreneurship, and extension education models, as well as sustainability-oriented entrepreneurship education. Given that over 65% of India's population resides in rural areas and that agricultural and rural enterprise development are central to national poverty reduction goals, the neglect of rural and agricultural entrepreneurship in higher education research represents a significant gap with direct development implications [87,88].

### **10.5. Ecosystem-level analysis**

Moving beyond individual and institutional levels, research should examine regional entrepreneurship ecosystems and the role of HEIs, network analysis of university-industry-government-civil society relationships, comparative analysis across Indian cities and regions, and the role of alumni networks in supporting student entrepreneurship. The relational view of entrepreneurship ecosystems provides a framework for understanding how the quality and density of inter-actor relationships—rather than merely the presence of ecosystem components—determine ecosystem performance, a lens that could productively be applied to mapping and strengthening regional higher education-entrepreneurship ecosystems in India [89].

### **10.6. Global comparative studies**

Comparative research examining Indian approaches relative to international models can provide valuable insights, including comparisons with international best practices, adaptation of international models to Indian contexts, India's unique contributions to experiential and entrepreneurship education, and cross-national studies of policy approaches. Countries such as Singapore, South Korea, and Israel—which have successfully transformed their higher education systems into engines of entrepreneurship and innovation through deliberate policy—offer instructive comparative cases for India's own reform trajectory [90].

### **10.7. Impact on economic development**

Research linking higher education experiential learning and entrepreneurship to broader economic development outcomes should examine contributions to job creation and economic growth, regional economic impact of university entrepreneurship ecosystems, the role in achieving national development goals (Aatmanirbhar Bharat,

SDGs), and cost-benefit analysis of public investment. Demonstrate that regions with higher concentrations of entrepreneurial activity exhibit superior economic resilience and growth, providing a macro-economic rationale for public investment in university-based entrepreneurship education that goes beyond individual graduate outcomes [91].

### **10.8. Pedagogical innovation**

Continued research on pedagogical innovation should include design-based research developing new experiential learning models, the effectiveness of specific techniques (design thinking, lean startup, challenge-based learning), integration with emerging pedagogies (flipped classroom, project-based learning, competency-based education), and assessment and feedback mechanisms. The emergence of artificial intelligence tools in education—including AI-based mentoring systems, automated portfolio assessment, and adaptive simulation platforms—opens new research frontiers in technology-enhanced experiential learning that are directly relevant to scaling quality experiential education across India's diverse and geographically dispersed higher education landscape [92–94].

## **11. Conclusion**

This systematic literature review synthesizes evidence from 30 scholarly publications examining the intersection of experiential learning, employability skills development, and entrepreneurial intentions in Indian higher education. The findings reveal that experiential learning approaches—including internships, live projects, industry partnerships, and hands-on entrepreneurship programs—significantly enhance both employability outcomes and entrepreneurial intentions among Indian students. Experiential learning positively influences entrepreneurial intention, with entrepreneurial self-efficacy serving as a critical mediator that substantially amplifies this effect. Collectively, experiential learning, self-efficacy, and entrepreneurial attitude explain 89.6% of the variance in entrepreneurial intentions [26].

Recent empirical research further reinforces the importance of experiential learning as a transformative pedagogical strategy for entrepreneurship education. Studies indicate that students who participate in experiential entrepreneurship programs demonstrate higher levels of entrepreneurial mindset, innovation capability, and opportunity recognition compared to students exposed to traditional lecture-based instruction [38, 58]. These findings suggest that experiential learning environments not only enhance theoretical understanding but also foster practical entrepreneurial competencies necessary for venture creation and professional adaptability. Experiential learning significantly enhances students' professional and practical competencies. After participating in activities such as internships, students demonstrate improved communication, problem-solving, and workplace behavior. It also increases their self-confidence and ability to apply theoretical knowledge in real-world contexts. Overall, these experiences contribute to better academic performance and make students more career-ready. Experiential learning significantly improves students' skills, self-efficacy, and academic performance, as supported by prior studies [5, 95].

The National Education Policy 2020 provides a transformative framework emphasizing skill-based experiential learning, vocational training, and entrepreneurship education across all levels of Indian education [9, 56]. The third objective of this study examined Indian students, revealing a strong positive association between practical learning exposure and the development of entrepreneurial mindset and intentions. The fourth objective focused on skill development, self-efficacy, and industry exposure, which act as key connecting pathways, enhancing both employability and entrepreneurial outcomes. This policy vision aligns with national development priorities articulated in the Startup India, Skill India, and Aatmanirbhar Bharat initiatives. However, significant implementation gaps persist, including inadequate funding, limited industry-academia collaboration, insufficient mentorship infrastructure, faculty preparedness challenges, and equity concerns [42, 52, 68]. Addressing these challenges requires coordinated efforts among policymakers, higher education institutions, and industry stakeholders. Strengthening institutional infrastructure, expanding mentorship networks, and fostering long-term university–industry partnerships can significantly improve the effectiveness of experiential learning initiatives. Additionally, integrating entrepreneurial learning into interdisciplinary curricula can further support the development of innovation-driven ecosystems within universities [64].

Effective experiential learning programs require five critical components: incremental pedagogical efficiency with flexible evaluation, faculty with entrepreneurial experience, extended institutional support, holistic mentoring, and authentic hands-on learning opportunities [34]. The integration of experiential learning with both employability and entrepreneurship objectives offers a synergistic approach that maximizes the impact of educational interventions in resource-constrained environments. This integration is mediated by the development of self-efficacy, which influences both employment readiness and entrepreneurial capacity. The findings confirm that experiential learning has a significant positive impact on entrepreneurial intentions through the mediating role of self-efficacy. It enhances students' confidence and belief in their abilities, which in turn strengthens their inclination toward entrepreneurial activities.

Policy recommendations emerging from this review include: establishing comprehensive entrepreneurship ecosystems within universities with structured curricula, mentorship infrastructure, and startup funding mechanisms; investing in faculty development to build capacity in experiential pedagogy and entrepreneurial education; strengthening industry-academia collaboration through formal partnership mechanisms and incentive structures; addressing equity and inclusion concerns, particularly gender-specific barriers to entrepreneurship; and implementing robust monitoring and evaluation frameworks to enable evidence-based policy refinement.

Critical research gaps include the need for longitudinal outcome studies tracking career trajectories, comparative effectiveness research examining different experiential learning modalities, mechanism studies explaining how experiential learning produces outcomes, faculty perspective research, equity and access studies, industry perspective research, policy implementation studies, and the development of standardized

assessment instruments. Addressing these gaps will strengthen the evidence base for policy and practice decisions.

Evidence-based policy recommendations drawn from prior studies emphasize that experiential learning significantly enhances employability and skill development in the Indian context [96]. It highlights the urgent need for skill-oriented transformation in higher education, especially in the era of AI-driven changes, where traditional degree-focused approaches are no longer sufficient. Indian higher education stands at a critical juncture, with the potential to transform from a system characterized by theoretical emphasis and limited industry engagement to one that effectively prepares graduates for both employment and entrepreneurship through experiential learning. Realizing this potential requires sustained commitment from policymakers, institutional leaders, faculty, industry partners, and students. Higher education institutions face key implementation challenges in experiential learning, including limited industry collaboration, resource constraints, and difficulties in integrating practical components into traditional curricula. These issues require coordinated efforts from governments, regulatory bodies, and educational institutions through policy support, funding, industry partnerships, and curriculum reforms. The evidence synthesized in this review provides a foundation for evidence-based decision-making and strategic action to build a higher education system that serves as a catalyst for individual career success, entrepreneurial capacity building, and national economic development.

Ultimately, experiential learning represents a strategic pathway for bridging the persistent gap between academic knowledge and practical application within higher education systems. By fostering collaboration between academia and industry and prioritizing hands-on learning opportunities, universities can equip graduates with the competencies necessary to thrive in dynamic labor markets and contribute meaningfully to innovation-driven economic growth. In the context of India's rapidly evolving knowledge economy, strengthening experiential learning ecosystems within higher education institutions will be critical for cultivating the next generation of entrepreneurs, innovators, and skilled professionals.

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