
International Journal of Innovations in Research

ISSN: 3048-9369 (Online)

Special Issue for Selected Papers of 4th International Conference on Shakti se Samridhi by IFTDO-CWYEE and Divatharv Vikas Foundation at Jaipur in February '26

Nurturing Tomorrow's Innovators: Strengthening the Startup Ecosystem through Structured School–College Mentorship Models

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Abstract

This paper explores the critical need to foster entrepreneurial mindsets at the school level in India, particularly within government and underprivileged schools. While India's startup ecosystem has flourished, innovation interventions predominantly target college or post-college students. This study argues that a truly sustainable and inclusive startup ecosystem requires earlier engagement, starting at the school level. Drawing upon field-based experiential learning and observations from numerous school-level entrepreneurship awareness sessions, this paper emphasizes the significance of structured school-college mentorship models in cultivating entrepreneurial thinking among young students.

Keywords: Startup Ecosystem, School–College Linkage, Entrepreneurship Education, Innovation Mentorship.

1. Introduction

India's startup landscape has undergone a transformative evolution, emerging as a global hub for innovation and entrepreneurship. Fueled by technological advancements, supportive government policies, and a growing investor community, the Indian startup ecosystem has witnessed unprecedented growth in recent years. However, a critical gap remains: the late entry point for entrepreneurship education and awareness. Current interventions primarily target college students or young professionals, overlooking the immense potential that lies within the younger generation, particularly those in government and underprivileged schools.

This paper posits that a robust and inclusive startup ecosystem necessitates a paradigm shift, advocating for the integration of entrepreneurship education at the school level. By nurturing entrepreneurial mindsets from a young age, we can empower students to become problem-solvers, innovators, and future leaders. This study draws upon the experiential learning from field-based initiatives and observations from numerous entrepreneurship awareness sessions conducted in schools to highlight the importance of structured school-college mentorship models in cultivating entrepreneurial thinking among young students.

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2. Literature Review

Existing literature on entrepreneurship and innovation education emphasizes the critical role of **early exposure to entrepreneurial thinking** in shaping long-term innovative behavior. Scholars argue that entrepreneurial mindset, creativity, and problem-solving abilities are not innate traits but develop progressively through structured learning and mentorship (Fayolle & Gailly, 2015).

Most empirical studies on entrepreneurship education, however, focus predominantly on **higher education institutions**, particularly management, engineering, and technology students. University-based incubation centers, startup accelerators, and innovation hubs have been widely studied as drivers of entrepreneurial intent and venture creation. These studies confirm that mentorship, institutional support, and ecosystem exposure significantly influence startup success (Etzkowitz & Leydesdorff, 2000).

3. Research Gap

Research on **school-level entrepreneurship education** remains limited, especially in the context of government and underprivileged schools. Available studies highlight that early innovation exposure enhances confidence, creativity, and risk-taking ability among students, yet such initiatives are often fragmented, informal, or extracurricular in nature. There is a lack of structured models integrating schools into formal innovation ecosystems.

Furthermore, literature on innovation ecosystems recognizes the importance of **institutional linkages** and multi-stakeholder collaboration. However, the role of school–college linkage as a foundational layer of the startup pipeline has received minimal scholarly attention. This gap is particularly significant in developing economies, where underprivileged students are closely connected to real-life socio-economic problems but lack access to mentorship and innovation infrastructure.

Thus, the existing literature reveals a clear research gap regarding **structured school–college mentorship models** and their potential to strengthen early-stage startup ecosystems. This study seeks to address this gap by combining field-based experiential insights with conceptual ecosystem frameworks.

4. Problem Statement

Despite the rapid growth of India's startup ecosystem, innovation and entrepreneurship interventions are largely concentrated at the college and post-college levels. This delayed exposure overlooks the critical stage of mindset formation that occurs during school education. As a result, a vast pool of potential innovators—particularly students from government and underprivileged schools—remains untapped.

These students are often closely connected to real-life social and economic challenges, making them natural problem identifiers. However, the absence of structured mentorship, innovation

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exposure, and institutional support prevents their ideas from being recognized, refined, and developed. Simultaneously, higher education institutions possess mentorship capacity, innovation infrastructure, and ecosystem linkages, yet remain weakly connected to school-level education.

The lack of an integrated school–college mentorship framework creates a disconnect in the innovation pipeline, leading to the loss of early-stage ideas and delayed entrepreneurial development. Addressing this gap is essential for building an inclusive, sustainable, and grassroots-driven startup ecosystem.

5. Objectives of the Study

- a) To examine the role of structured school–college mentorship in developing entrepreneurial mindset among school students, particularly from government and underprivileged backgrounds.
- b) To identify gaps in the existing startup ecosystem with respect to early-stage innovation exposure and institutional linkage between schools and colleges.
- c) To propose a conceptual framework for integrating schools into the startup ecosystem to strengthen early-stage and inclusive startup pipeline development.

6. Research Methodology

This study adopts a **qualitative and exploratory research design** to examine the role of structured school–college mentorship models in strengthening the startup ecosystem at an early stage. The research focuses on understanding entrepreneurial mindset development among school students, particularly from government and underprivileged backgrounds.

The study is primarily based on **field-based experiential research**. Primary data was collected through direct engagement with school students during entrepreneurship and innovation mindset sessions conducted by the researcher. Observations of student ideation, problem-identification ability, and confidence levels before and after mentorship exposure formed the core of the analysis. Informal interactions with teachers and institutional stakeholders further supported the findings.

Secondary data was gathered from academic literature, policy documents, and reports related to entrepreneurship education and innovation ecosystems to provide theoretical grounding.

A **purposive sampling technique** was used, selecting school students who participated in the mentorship sessions. Data was analyzed using **thematic analysis**, identifying recurring patterns related to problem awareness, idea articulation, and the impact of mentorship.

Ethical considerations were maintained by ensuring voluntary participation, anonymity of participants, and academic use of observations. Despite being context-specific, the methodology provides valuable insights into early-stage innovation pipeline development.

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7. The Untapped Potential of School-Level Entrepreneurship

The current focus on college-level entrepreneurship initiatives overlooks a significant opportunity to cultivate entrepreneurial skills and mindsets at a formative stage. Introducing entrepreneurship concepts at the school level can:

- **Foster Creativity and Innovation:** Young minds are naturally curious and imaginative. Exposing them to entrepreneurial challenges can stimulate their creativity and encourage them to think outside the box.
- **Develop Problem-Solving Skills:** Entrepreneurship is inherently about identifying problems and developing innovative solutions. Engaging students in problem-solving activities can equip them with valuable skills applicable to various aspects of life.
- **Promote a Growth Mindset:** Entrepreneurship emphasizes learning from failures and adapting to challenges. Instilling a growth mindset in young students can empower them to embrace challenges and persevere in the face of adversity.
- **Enhance Financial Literacy:** Entrepreneurship education can introduce students to basic financial concepts, such as budgeting, revenue generation, and profit margins, fostering financial literacy from a young age.
- **Encourage Social Responsibility:** Entrepreneurship can be a powerful tool for addressing social issues. By encouraging students to develop ventures that address community needs, we can foster a sense of social responsibility and civic engagement.

8. The Role of School-College Mentorship Models

While introducing entrepreneurship concepts at the school level is crucial, it is equally important to provide students with guidance and support. Structured school-college mentorship models can play a vital role in nurturing entrepreneurial mindsets and providing students with practical insights.

- **Knowledge Transfer:** College students and faculty can share their knowledge and experiences with school students, providing them with a real-world perspective on entrepreneurship.
- **Skill Development:** Mentors can guide students in developing essential skills, such as idea generation, business planning, and marketing.
- **Networking Opportunities:** Mentorship programs can provide students with access to valuable networks, connecting them with potential investors, industry experts, and other entrepreneurs.
- **Motivation and Encouragement:** Mentors can provide students with the motivation and encouragement they need to overcome challenges and pursue their entrepreneurial aspirations.
- **Real-World Exposure:** Mentorship programs can facilitate internships and shadowing opportunities, providing students with firsthand experience in the startup ecosystem.

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9. Field-Based Experiential Learning and Observations

A case illustration emerging from the field-based mentorship sessions highlights the transformative impact of structured school–college linkage. A school student from a government institution identified a routine household problem encountered within her family. Initially, the student lacked the confidence, vocabulary, and conceptual clarity to articulate the idea as an innovation.

Following exposure to entrepreneurship and innovation mindset sessions, the student was introduced to basic concepts of problem identification, solution ideation, and design thinking. Mentorship support enabled the student to clearly define the problem, explore possible solutions, and understand the feasibility of her idea. This structured guidance not only enhanced the quality of the idea but also significantly improved the student's confidence and self-belief.

The case demonstrates that when provided with appropriate mentorship and institutional support, school students—especially from underprivileged backgrounds—can transition from intuitive problem awareness to structured innovative thinking, reinforcing the importance of early-stage mentorship in the startup ecosystem. These sessions have revealed:

- **Enthusiasm and Curiosity:** Students are generally enthusiastic and curious about entrepreneurship, demonstrating a willingness to learn and explore new ideas.
- **Creative Ideas:** Students often come up with innovative ideas for addressing local challenges, showcasing their potential to become problem-solvers.
- **Lack of Awareness:** Many students lack awareness of the resources and support available to entrepreneurs, highlighting the need for increased awareness and access to information.
- **Limited Exposure:** Students from government and underprivileged schools often have limited exposure to successful entrepreneurs and role models, emphasizing the importance of mentorship programs.
- **Need for Practical Guidance:** Students require practical guidance on how to develop their ideas, create business plans, and secure funding.

10. Conceptual Model: School–College Startup Ecosystem Framework

Description of the Conceptual Model

The proposed school–college mentorship model aligns closely with India's contemporary education and innovation policy framework. The National Education Policy (NEP) 2020 emphasizes experiential learning, critical thinking, creativity, and early exposure to multidisciplinary skills, all of which are central to the proposed model.

Additionally, the framework supports national innovation missions aimed at promoting entrepreneurship, grassroots innovation, and inclusive development. By integrating schools into the formal innovation ecosystem through institutional mentorship, the model complements policy objectives of democratizing innovation and nurturing talent from diverse socio-economic backgrounds.

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Thus, the proposed model not only addresses academic and ecosystem gaps but also strengthens policy implementation by operationalizing national goals at the grassroots level.

Stages of the Innovation Model

This document outlines the six key stages of an innovation model designed to foster creativity and problem-solving skills among students, starting from problem identification at the school level and culminating in incubation and ecosystem integration. The model emphasizes mentorship, practical application, and connection to real-world resources to nurture innovative ideas and translate them into tangible solutions.

a) Problem Identification (School Level)

The initial stage of the innovation model focuses on empowering students to become keen observers of their surroundings. This involves encouraging them to identify real-life problems that exist within their immediate environment, particularly within their households and communities. This stage is crucial because it grounds the innovation process in tangible issues that students can directly relate to, fostering a sense of ownership and motivation.

Key Activities:

- **Observation Exercises:** Students participate in guided observation exercises within their homes, schools, and neighborhoods, noting down challenges and inefficiencies they encounter.
- **Brainstorming Sessions:** Facilitated brainstorming sessions encourage students to share their observations and collectively identify common problems.
- **Problem Prioritization:** Students learn to prioritize problems based on factors such as impact, feasibility, and personal interest.
- **Documentation:** Students document the identified problems, including descriptions, potential causes, and affected individuals or groups.

Expected Outcomes:

- A list of real-life problems identified by students.
- Increased awareness of challenges within their immediate environment.
- Enhanced observation and critical thinking skills.
- A sense of ownership and motivation to solve identified problems.

b) Innovation Exposure

Once students have identified real-life problems, the next stage involves providing them with a basic orientation on innovation, entrepreneurship, and design thinking. This exposure aims to introduce students to structured problem-solving approaches and equip them with the fundamental concepts and tools necessary to develop innovative solutions.

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Key Activities:

- **Introductory Workshops:** Workshops covering the basics of innovation, entrepreneurship, and design thinking principles.
- **Case Studies:** Analysis of successful innovations and entrepreneurial ventures to understand the innovation process and key success factors.
- **Design Thinking Exercises:** Hands-on exercises that guide students through the design thinking process, including empathizing, defining, ideating, prototyping, and testing.
- **Guest Lectures:** Presentations by entrepreneurs, innovators, and industry experts to share their experiences and insights.

Expected Outcomes:

- Basic understanding of innovation, entrepreneurship, and design thinking concepts.
- Familiarity with structured problem-solving approaches.
- Increased confidence in their ability to generate innovative ideas.
- Exposure to real-world examples of successful innovations.

c) School-College Mentorship Linkage

This stage establishes a crucial link between schools and colleges, leveraging the expertise and resources available at the college level to support and guide school students in their innovation journey. Colleges, through faculty, student mentors, and innovation cells, provide guidance, feedback, and validation to school-level ideas.

Key Activities:

- **Mentor Identification and Assignment:** Identifying suitable mentors from college faculty, student body, and innovation cells, and assigning them to school student teams.
- **Regular Mentorship Sessions:** Scheduled meetings between mentors and student teams to discuss ideas, provide feedback, and offer guidance.
- **College Resource Access:** Providing school students with access to college libraries, labs, and other resources relevant to their innovation projects.
- **Joint Workshops and Seminars:** Organizing joint workshops and seminars for school and college students to foster collaboration and knowledge sharing.

Expected Outcomes:

- Strong mentorship relationships between school students and college mentors.
- Access to college-level expertise and resources.
- Improved understanding of the technical and practical aspects of innovation.
- Increased confidence and motivation among school students.

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d) Idea Structuring and Validation

Building upon the mentorship support, this stage focuses on helping students refine their initial ideas, assess their feasibility, and develop solution-oriented thinking. Mentorship plays a critical role in guiding students through the process of structuring their ideas into coherent concepts and validating their potential impact and viability.

Key Activities:

- **Idea Refinement Workshops:** Workshops focused on refining ideas, defining target users, and developing value propositions.
- **Feasibility Analysis:** Conducting feasibility studies to assess the technical, economic, and market viability of the proposed solutions.
- **Market Research:** Gathering data on potential customers, competitors, and market trends to validate the market demand for the proposed solutions.
- **Solution-Oriented Thinking Exercises:** Exercises that encourage students to think critically about potential solutions and develop innovative approaches.

Expected Outcomes:

- Well-structured and refined ideas with clear value propositions.
- Thorough understanding of the feasibility and market potential of the proposed solutions.
- Development of solution-oriented thinking skills.
- Increased confidence in the viability of their ideas.

e) Prototype Development

Following idea validation, selected ideas move towards the development of low-cost prototypes. This stage provides students with the opportunity to translate their conceptual ideas into tangible representations, allowing them to test and refine their solutions. College-level infrastructure and technical support are crucial in facilitating this process.

Key Activities:

- **Prototype Design Workshops:** Workshops focused on designing and developing low-cost prototypes.
- **Access to College Labs and Equipment:** Providing students with access to college labs, 3D printers, and other equipment necessary for prototype development.
- **Technical Support:** Providing technical assistance and guidance from college faculty and students.
- **Prototype Testing and Refinement:** Testing the prototypes with target users and gathering feedback to refine the design and functionality.

Expected Outcomes:

- Functional low-cost prototypes of the selected ideas.
- Practical experience in prototype development and testing.

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- Improved understanding of the technical challenges and opportunities associated with their solutions.
- Refined prototypes based on user feedback.

f) Incubation and Ecosystem Integration

The final stage of the innovation model focuses on linking promising innovations to incubation centers, innovation councils, and government support mechanisms. This integration into the broader innovation ecosystem provides students with access to resources, mentorship, and funding opportunities that can help them further develop their innovations and potentially launch them as successful ventures.

Key Activities:

- **Incubation Center Linkages:** Connecting students with incubation centers that provide mentorship, office space, and other resources.
- **Innovation Council Engagement:** Engaging with innovation councils to showcase student innovations and seek guidance and support.
- **Government Support Program Awareness:** Providing information about government support programs and funding opportunities for startups and innovators.
- **Networking Events:** Organizing networking events to connect students with potential investors, partners, and customers.

Expected Outcomes:

- Successful integration of promising innovations into the broader innovation ecosystem.
- Access to incubation support, funding opportunities, and mentorship.
- Increased likelihood of commercializing student innovations.
- Development of entrepreneurial skills and mindset.

11. Challenges

Despite its potential, the implementation of structured school–college mentorship models faces several challenges. A key limitation is the shortage of trained innovation and entrepreneurship mentors, particularly at the school level. Additionally, rigid school curricula and examination-oriented systems leave limited scope for experiential and innovation-based learning.

Resource constraints, including lack of infrastructure, funding, and access to innovation tools in government and underprivileged schools, further restrict effective implementation. Coordination challenges between schools and higher education institutions also affect continuity and scalability of mentorship initiatives. Addressing these challenges is essential for the sustainable integration of schools into the startup ecosystem.

12. Recommendations

Based on the findings of this study, the following recommendations are proposed:

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- **Integrate Entrepreneurship Education into the School Curriculum:** Incorporate entrepreneurship concepts into the school curriculum, starting from the primary level.
- **Establish School-College Mentorship Programs:** Create structured mentorship programs that connect school students with college students and faculty.
- **Organize Entrepreneurship Workshops and Competitions:** Conduct regular workshops and competitions to provide students with opportunities to develop their skills and showcase their ideas.
- **Provide Access to Resources and Information:** Ensure that students have access to information about entrepreneurship resources, such as incubators, accelerators, and funding opportunities.
- **Promote Entrepreneurship Role Models:** Invite successful entrepreneurs to speak at schools and share their experiences with students.
- **Focus on Government and Underprivileged Schools:** Prioritize efforts to promote entrepreneurship in government and underprivileged schools, ensuring that all students have equal opportunities to succeed.

13. Conclusion

Nurturing entrepreneurial mindsets at the school level is essential for building a sustainable and inclusive startup ecosystem in India. By integrating entrepreneurship education into the school curriculum, establishing school-college mentorship programs, and providing access to resources and information, we can empower young students to become innovators, problem-solvers, and future leaders. Investing in school-level entrepreneurship is an investment in the future of India. It is an investment in a generation of young people who are equipped to create jobs, solve problems, and contribute to the economic and social well-being of the nation. The time to act is now, to unlock the untapped potential

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