

# INSPIRE-MANAK and School-Based Innovation: A Case Study of District Kulgam, Kashmir

Sajad Hussain Mir

Sr. Academic Officer, Department of Education in Science and Mathematics,

State Council of Educational Research and Training (SCERT), J&K, India

Corresponding Author Email: [sajad20031\[at\]gmail.com](mailto:sajad20031[at]gmail.com);

[sajad20031\[at\]yahoo.co.in](mailto:sajad20031[at]yahoo.co.in)

ORCID ID: 0000-0002-4655-7846

**Abstract:** *The INSPIRE–MANAK Scheme seeks to cultivate scientific temper and innovation among school students. However, its effectiveness largely depends on awareness, mentoring, and institutional facilitation. The current study examines the outreach and implementation of INSPIRE–MANAK in District Kulgam (Kashmir Division) through responses collected from students, teachers, and Heads of Institutions. Descriptive analysis reveals that while a moderate proportion of students (53.84%) were aware of the scheme, only 16.23% had registered under INSPIRE–MANAK, indicating a substantial gap between awareness and active participation. Formal exposure to the scheme was limited, with merely 9.40% of students having attended any orientation programme, and satisfaction with such initiatives remaining modest. Teachers exhibited higher awareness levels (72%) but reported significant challenges in mentoring, primarily due to inadequate resources and limited structured guidance. Institutional leadership showed partial engagement, as only 40% of schools regularly organized orientation activities. Across all stakeholder groups, lack of resources, insufficient awareness, and limited mentoring emerged as dominant constraints. The findings highlight that INSPIRE–MANAK implementation in the district remains fragmented and episodic, underscoring the need for sustained awareness programmes, structured teacher training, and stronger institutional mechanisms aligned with the vision of the National Education Policy 2020.*

**Keywords:** INSPIRE–MANAK; School-Level Innovation; Experiential Learning; Creativity.

## 1. Introduction

Innovation and scientific inquiry are increasingly recognized as central pillars of educational transformation in the twenty-first century. Nations aspiring to build knowledge-driven economies are placing renewed emphasis on nurturing creativity, critical thinking, and problem-solving abilities from an early age (OECD, 2018). In the Indian context, this vision has been institutionalized through a series of policy initiatives that seek to shift schooling from rote-based learning to experiential, inquiry-oriented pedagogies rooted in real-world problem solving (NEP, 2020).

The Innovation in Science Pursuit for Inspired Research (INSPIRE) Scheme, launched by the Department of Science and Technology (DST), Government of India, represents a flagship effort to cultivate scientific temper and innovation among school students nationwide. Announced in 2008 and operationalized from 2009, the scheme was conceived to strengthen India's science and technology ecosystem by identifying and nurturing young talent at the school level (DST, 2019). In 2016, the programme was restructured and renamed as MANAK (Million Minds Augmenting National Aspirations and Knowledge), signaling an expanded mandate to mobilize large-scale grassroots innovation with societal relevance (NIF, 2021).

INSPIRE–MANAK adopts a learner-centric and problem-based approach, encouraging students to observe their surroundings, identify local challenges, and propose science-based solutions. By linking classroom learning with lived experiences, the scheme aligns closely with constructivist and experiential learning theories, which emphasize learning through exploration, reflection, and application (Kolb, 2015; Prince & Felder, 2006). The initiative also resonates with

global discourses on STEM education, which advocate early exposure to innovation ecosystems as a means of fostering long-term engagement with science and research careers (Bybee, 2013).

The National Education Policy (NEP) 2020 further reinforces the relevance of INSPIRE–MANAK by explicitly foregrounding scientific temper, creativity, and innovation as core educational outcomes. NEP-2020 envisions schools as spaces where curiosity, inquiry, and problem-solving are systematically cultivated through experiential learning, interdisciplinary approaches, and community engagement (NEP, 2020). In this policy landscape, INSPIRE–MANAK emerges as a critical operational mechanism for translating national aspirations into school-level practice.

Despite its strong policy foundation and nationwide reach, emerging research suggests that the effectiveness of innovation-focused schemes depends heavily on awareness dissemination, teacher preparedness, institutional leadership, and availability of mentoring and resources (Kremer et al., 2018; OECD, 2016). Studies have highlighted that gaps between policy intent and on-ground implementation can limit student participation and dilute programme outcomes, particularly in geographically and resource-constrained regions (Tilak, 2015).

Against this backdrop, the present study examines the implementation and outreach of the INSPIRE–MANAK Scheme across educational institutions in District Kulgam of the Kashmir Division. By analyzing responses from students, teachers, and Heads of Institutions, the study assesses levels of awareness, participation patterns, mentoring support, and perceived constraints. The findings contribute empirical insights into how national innovation policies are experienced

at the grassroots level, highlighting local challenges and enabling factors that shape policy effectiveness and offering evidence-based guidance for future policy implementation and reform in alignment with NEP-2020.

## 2. Methodology

**Study Area:** Educational institutions (Middle stage & Secondary stage) across District Kulgam of Kashmir Division were selected for the study.

**Sample Size:** A total of 06 (Six) educational institutions comprising a total of **117 students, 25 teachers** and **05 Heads of the**

**Institutions (HOIs)** from District Kulgam of Kashmir Division were selected for carrying out the study of impact of INSPIRE MANAK programme. Questionnaires for students, teachers and head of the institutions were used to ascertain the impact of INSPIRE MANAK scheme.

**Statistical Analysis:** The retrieved copies of questionnaire were subjected to statistical analysis using Statistical Package for the Social Sciences (SPSS) for proper analysis. The data of the study were analyzed through descriptive and inferential statistics.

## 3. Results

In this section, responses collected from students, teachers, and HOIs across various schools in District Kulgam were systematically examined using suitable descriptive statistical methods. The analysis enabled the identification of key trends and patterns, and the major findings are presented below under distinct stakeholder-based categories:

### Student Responses:

The findings indicate a moderate level of awareness of the INSPIRE-MANAK Scheme among students, with 53.84% reporting awareness, while a substantial 46.16% remained unaware. Formal exposure to the scheme appears limited, as only 42.73% of students reported receiving any awareness input, and a very small proportion (9.40%) had attended an orientation or workshop. Satisfaction levels among those exposed to orientation activities were mixed, with a noticeable proportion expressing dissatisfaction or neutrality, suggesting gaps in the quality and effectiveness of these programmes.

Student participation in the scheme remains low, as only 16.23% had registered under INSPIRE-MANAK. Among non-registered students, lack of awareness emerged as the most frequently cited barrier, followed by difficulty in understanding procedural requirements, lack of interest in innovation, and time constraints. These responses indicate that non-participation is influenced more by systemic and informational barriers than by a lack of student motivation alone.

Teacher support was perceived variably by students. While a majority acknowledged teacher motivation either strongly or moderately, a sizeable proportion expressed neutrality or disagreement. Interestingly, students reported relatively

stronger agreement regarding teachers' assistance in prototype or model development, though many remained undecided, reflecting inconsistent mentoring experiences across schools. Parental involvement was reported as limited or occasional, highlighting weak reinforcement beyond the school environment. Notably, students recommended regular and holistic awareness programmes at the school level.

### Teacher Responses:

At the teacher level, awareness of the INSPIRE-MANAK Scheme was reported by 72% of respondents, indicating reasonable familiarity with the programme. However, participation in structured capacity-building activities remained uneven, with a notable proportion of teachers having neither received orientation nor attended formal workshops related to the scheme.

A significant majority of teachers perceived mentoring INSPIRE projects as challenging, with lack of resources identified as the most critical constraint, followed closely by lack of student awareness. Time constraints were reported as a comparatively minor barrier. These findings suggest that teachers are willing to engage but are constrained by limited institutional support and infrastructural readiness. Importantly, all teachers converged on the need for more frequent and comprehensive orientation programmes to strengthen effective implementation.

**HOI responses:** Among Heads of Institutions, awareness of INSPIRE-MANAK was relatively high, though not universal. While a majority had attended orientation programmes, perceptions regarding their effectiveness were divided, with equal proportions rating them as effective or neutral. Only a minority considered them ineffective.

Institutional practices related to INSPIRE-MANAK varied considerably. Less than half of the HOIs reported conducting school-level orientations, and responses regarding student innovation outputs differed sharply across institutions. HOIs identified lack of awareness as the primary factor limiting participation, followed by insufficient guidance, time constraints, and resource shortages. In terms of improvement strategies, most HOIs emphasized the need for additional workshops, enhanced resource availability, printed support material, and special training camps within schools.

When examined collectively, the findings reveal a progressive decline from awareness to action across stakeholder groups. While teachers and HOIs demonstrate relatively higher awareness of INSPIRE-MANAK, this awareness does not translate proportionately into student participation or innovation outcomes. Students exhibit limited exposure to structured orientations, low registration rates, and fragmented mentoring experiences.

A consistent theme across all groups is the identification of system-level constraints, particularly lack of resources, inadequate training, and insufficient clarity regarding processes. Teachers perceive mentoring as challenging, students report procedural difficulty and limited guidance, and HOIs acknowledge gaps in institutional execution. The unanimous recommendation across students, teachers, and HOIs for holistic, recurring, and school-embedded awareness

and training initiatives underscores the shared recognition that sporadic interventions are insufficient to realize the scheme's objectives.



Figure 1: Showing collection of data from students of District Kulgam

#### 4. Discussion

The findings from District Kulgam reflect a broader national challenge in translating policy intent into meaningful grassroots participation. Although INSPIRE-MANAK is conceptualized as a decentralized, school-driven innovation programme, the present study indicates that its implementation remains awareness-oriented rather than participation-centric. Similar implementation gaps have been reported in national evaluations, which emphasize that sustained mentoring and institutional ownership are critical for student innovation to flourish (DST, 2019; NIF, 2021).

The limited reach and effectiveness of orientation programmes observed in Kulgam resonate with NEP-2020's assertion that innovation and critical thinking cannot be fostered through isolated activities but require continuous experiential learning frameworks embedded within schools (NEP, 2020). Research on school-based innovation ecosystems highlights that teacher preparedness, access to resources, and administrative support collectively shape student engagement in innovation programmes (OECD, 2018; UNESCO, 2017).

The perception of mentoring as challenging among teachers aligns with existing literature that identifies lack of training and infrastructural support as major deterrents to teacher-led innovation initiatives (Kremer et al., 2018). Furthermore, the weak role of parental engagement observed in this study underscores the need for community-linked innovation models, which have been shown to significantly enhance student motivation and persistence (NIF, 2020).

Overall, these findings reinforce that INSPIRE-MANAK's transformative potential depends on systematic capacity building. Regular orientation cycles, and supportive innovation environments at the school level are crucial. Without these structural enablers, awareness alone is unlikely to produce sustained innovation outcomes.

#### 5. Recommendations

1) **Strengthening Awareness Mechanisms:** Regular and structured awareness programmes should be

institutionalized for students, teachers, and school leaders to ensure comprehensive understanding of the scheme.

- 2) **Curricular Integration of Innovation:** INSPIRE-MANAK activities should be embedded within the school curriculum to promote innovation as an integral component of learning rather than an extracurricular activity.
- 3) **Enhancing Teacher and Institutional Capacity:** Systematic training and appropriate incentives should be provided to teachers and Heads of Institutions to strengthen their mentoring and facilitative roles.
- 4) **Recognition and Academic Incentivization:** Formal recognition through certificates, awards, or academic credits should be introduced to motivate sustained student participation.
- 5) **Improved Resource Provisioning:** Adequate allocation of financial, material, and mentoring resources should be ensured, particularly for schools operating in resource-constrained settings.

#### References

- [1] Bybee, R. W. (2013). *The Case for STEM Education*. NSTA Press.
- [2] Department of Science and Technology (DST). (2019). *INSPIRE Scheme: Guidelines and Framework*. Government of India.
- [3] Department of Science and Technology (DST). (2023). *INSPIRE-MANAK Operational Manual*. Government of India.
- [4] Kolb, D. A. (2015). *Experiential Learning: Experience as the Source of Learning and Development*. Pearson.
- [5] Kremer, M., Brannen, S., & Glennerster, R. (2018). *Education and Innovation Systems*. World Bank.
- [6] Kremer, M., Rao, G., & Schilbach, F. (2018). Behavioral development economics. *Handbook of Behavioral Economics*, 1, 345–458.
- [7] National Innovation Foundation (NIF). (2020). *Grassroots Innovation and Student Engagement*. Ahmedabad.
- [8] National Innovation Foundation (NIF). (2021). *INSPIRE-MANAK: Annual Report*.

- [9] OECD. (2016). *Innovating Education and Educating for Innovation*. OECD Publishing.
- [10] OECD. (2018). *The Future of Education and Skills: Education 2030*. Paris.
- [11] Prince, M., & Felder, R. (2006). Inductive teaching and learning methods. *Journal of Engineering Education*, 95(2), 123–138.
- [12] Tilak, J. B. G. (2015). Education, innovation, and human capital. *Economic and Political Weekly*, 50(10), 32–38.
- [13] UNESCO. (2017). *Fostering Creativity and Innovation in Education*. Paris.