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Bridging Policy and Practice: A Critical Examination of INSPIRE–MANAK Implementation in District Anantnag, Kashmir

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Abstract

The INSPIRE–MANAK scheme fosters scientific creativity and problem-solving skills among students by providing a structured platform for school-based innovation. It plays a crucial role in promoting early research aptitude and aligning education with a knowledge-driven economy. In this context, the present study critically examines its implementation in District Anantnag through the perspectives of students, teachers, and Heads of Institutions. The study revealed 39.09% awareness among students, while a majority (60.91%) remained unaware. Participation levels were notably low, with just 15.03% of students registered and only 12.78% having attended orientation programmes. Lack of awareness (44%) and time constraints (20.66%) emerged as key barriers. Although schools were the primary source of information (67.66%), formal awareness initiatives reached only 17.29% of students, with mixed satisfaction levels. Teachers demonstrated relatively high awareness (82.75%) but limited engagement in capacity-building programmes (17.24%), with 65.51% reporting challenges in mentoring students. Resource constraints (31.03%) and inadequate guidance (27.58%) further restricted effective implementation. While HOIs exhibited universal awareness (100%), only half had received orientation, and institutional efforts remained inconsistent despite 66.66% reporting school-level activities. Overall, the study highlights a clear policy–practice misalignment, characterized by low student engagement, inadequate teacher preparedness, and fragmented institutional support, underscoring the need for systemic capacity building and sustained innovation integration aligned with NEP-2020.

Keywords: INSPIRE–MANAK; School-Level Innovation; NEP-2020; Experiential Learning; Teacher Mentorship.

Introduction

India's aspiration to emerge as a global knowledge economy is closely linked to its capacity to nurture scientific temper, creativity, and innovation from an early age. Recognizing this imperative, the Government of India has launched several policy-driven initiatives aimed at strengthening the science and innovation ecosystem within the school education sector. Among these, the Innovation in Science Pursuit for Inspired Research (INSPIRE) scheme, initiated by the Department of Science and Technology (DST) in 2008 and made operational in 2009, represents a landmark effort to systematically identify and nurture young scientific talent across the country (DST, 2019; GoI, 2018). The scheme was conceptualized to

attract students towards science by fostering curiosity, inquiry, and problem-solving skills essential for long-term research and development capacity.

Unlike conventional merit-based scholarship programmes, INSPIRE adopts a competency-oriented approach that emphasizes experiential learning, creativity, and real-world application of scientific concepts. Students are encouraged to observe their surroundings, identify locally relevant problems, and develop innovative solutions grounded in scientific principles. Such an approach aligns with contemporary theories of constructivist learning and inquiry-based education, which highlight active learner engagement as central to meaningful knowledge construction (Kolb, 1984; Bruner, 1996; OECD, 2018). By shifting the focus from rote learning to innovation-driven exploration, INSPIRE contributes to the development of higher-order cognitive skills, including critical thinking, creativity, and collaboration.

In 2016, the programme was restructured and expanded as INSPIRE–MANAK (Million Minds Augmenting National Aspirations and Knowledge), reflecting its broadened mandate to create a nationwide pipeline of student innovators (DST, 2021). Implemented in collaboration with the National Innovation Foundation (NIF), the scheme aims to identify, mentor, and financially support original student ideas with societal relevance. The emphasis on grassroots innovation—addressing challenges related to health, sanitation, environment, agriculture, energy, and inclusive development—positions INSPIRE-MANAK as a strategic instrument for promoting socially responsive science education (NIF, 2021; Gupta, 2016).

The operational architecture of INSPIRE-MANAK is decentralized and institution-led, relying heavily on schools and teachers as key implementing agents. Schools are responsible for conducting internal idea screening and nominating promising student innovations through the E-MIAS (Electronic Management of INSPIRE Award Scheme) portal. Selected ideas are subsequently evaluated on parameters such as originality, feasibility, sustainability, and potential societal impact, with shortlisted students receiving mentorship support for prototype development (DST, 2023). This design underscores the critical role of institutional leadership, teacher mentorship, and administrative facilitation in translating policy intent into tangible student outcomes (Fullan, 2015; Darling-Hammond et al., 2017).

The relevance of INSPIRE-MANAK has further increased in the context of the National Education Policy (NEP) 2020, which strongly advocates for experiential learning, innovation, and integration of vocational and research-oriented skills within school education (NEP, 2020). NEP-2020 envisions schools as spaces for creativity, scientific inquiry, and problem-solving, thereby providing a strong policy rationale for programmes such as INSPIRE-MANAK. International research similarly emphasizes that early exposure to innovation ecosystems significantly enhances students' long-term engagement with STEM fields and research careers (OECD, 2019; World Economic Forum, 2020).

Despite its progressive design and policy relevance, emerging evidence suggests that the implementation and outreach of INSPIRE-MANAK vary significantly across regions, institutions, and stakeholder groups (Kapur & Mehta, 2019; NCERT, 2022). Factors such as uneven awareness, limited teacher preparedness, resource constraints, and weak institutional mechanisms often mediate student participation and innovation outcomes. Therefore, systematic empirical studies at the district and institutional levels are essential to assess how effectively the scheme is being operationalized and to identify gaps between policy objectives and ground realities.

Within this broader national and policy context, the present study seeks to critically examine the outreach and implementation of the INSPIRE-MANAK scheme across selected districts of the Kashmir Division, with particular emphasis on students, teachers, and Heads of Institutions. By situating local-level findings

within national policy frameworks and existing innovation literature, the study aims to contribute evidence-based insights for strengthening school-level innovation ecosystems and advancing the goals of NEP-2020.

Methodology

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

Sample Size: A total of 06 (Six) educational institutions comprising a total of 133 students, 29 teachers and 06 Heads of the Institutions from District Anantnag of Kashmir Division were selected for carrying out the study of impact of INSPIRE MANAK programme. A duly framed questionnaire 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 was analyzed through descriptive and inferential statistics.

RESULTS

In this section, responses collected from students, teachers, and Heads of Institutions (HOIs) across various schools in District Pulwama 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 analysis of student responses from District Anantnag reveals limited awareness and participation in the INSPIRE-MANAK Scheme. Only 39.09% of students reported being aware of the scheme, while a majority (60.91%) indicated no awareness. Formal awareness outreach was reported by merely 17.29% of students, whereas 82.71% stated that they had not received any awareness programme related to INSPIRE-MANAK.

Schools emerged as the primary source of information, with 67.66% of students learning about the scheme through school channels, followed by SCERT (18.79%), school posters (12.78%), and online platforms (0.75%). Attendance in orientation or workshop programmes was notably low, with only 12.78% of students reporting participation. Among those who attended, satisfaction levels varied: 39.09% expressed satisfaction, 3% reported high satisfaction, while 18.04% were dissatisfied, 2.25% were very dissatisfied, and 36.81% remained neutral.

Participation under INSPIRE-MANAK was minimal, with only 15.03% of students reporting registration, compared to 84.97% who had never registered. Among registered students, 30.82% reported participation up to the district level and 6.01% up to the state level, while the remaining responses were neutral. Students who had not registered cited lack of awareness (44%) as the primary reason, followed by time constraints (20.66%), lack of interest in innovation (3.52%), difficulty in understanding the process (3.42%), and other or unspecified reasons (28.4%).

Regarding teacher support, 37.59% of students strongly agreed and 27.06% agreed that teachers motivate them to participate in the INSPIRE programme, while 21.78% disagreed or strongly disagreed and 12.78% remained neutral. Teacher assistance in prototype or model development was reported by 33.83% of students (strongly agree and agree), whereas 19.52% disagreed or strongly disagreed and 46.61% expressed a neutral response.

Institutional efforts toward awareness were reported with moderate variation, as 9% of students strongly agreed and 47.36% agreed that their schools conduct orientation sessions or workshops, while 12.78% disagreed and 30.82% remained neutral. Parental involvement was reported to be limited, with only 10.52% of students indicating active parental engagement, 63.90% reporting occasional involvement, and 27.06% indicating neutral responses. Notably, all students emphasized the need for frequent and holistic awareness programmes or workshops at the school level to enhance participation in the INSPIRE-MANAK Scheme.

Teacher Responses: The analysis of teacher responses from District Anantnag indicates a relatively high level of awareness of the INSPIRE programme, with 82.75% of teachers reporting awareness, while 17.25% indicated that they were not aware. The primary source of information was the school system, as reported by 62.06% of teachers, followed by SCERT (6.89%) and discussions with other teachers (6.89%), whereas 24.13% did not specify the source of awareness.

Participation of teachers in INSPIRE-related capacity-building activities was limited. Only 17.24% of teachers reported attending any orientation or workshop related to the INSPIRE programme, while a large majority (82.76%) had not attended any such training. With regard to the perceived effectiveness of orientation programmes, 48.27% of teachers agreed and 20.68% strongly agreed that such programmes were effective. However, 13.78% expressed disagreement or strong disagreement, and 17.24% remained neutral.

Teachers' perceptions of student participation revealed that 37.93% reported that none of their students had produced innovative models under INSPIRE-MANAK. In contrast, 55.17% indicated student participation in the range of one to five models, while 6.89% reported participation exceeding five models.

Mentoring challenges were widely acknowledged by teachers. A majority (65.51%) either strongly agreed or agreed that guiding students under the INSPIRE programme is challenging, whereas 13.79% expressed neutral views and 20.68% disagreed or strongly disagreed. Teachers identified lack of resources (31.03%) and insufficient guidance mechanisms (27.58%) as the primary factors hindering student participation, followed by time constraints (17.24%), lack of awareness (10.34%), and other unspecified factors (13.79%).

Notably, all teachers emphasized the need for more frequent orientation programmes and holistic workshops to strengthen mentoring capacities and enhance effective implementation of the INSPIRE-MANAK Scheme.

HOI responses: The analysis of responses from Heads of Institutions (HOIs) in District Anantnag indicates universal awareness of the INSPIRE-MANAK Scheme, with 100% of respondents reporting awareness. The majority of HOIs (80%) reported that they first learned about the scheme through local education authorities, while the remaining 20% cited other sources of information.

Participation of HOIs in orientation or capacity-building programmes was evenly distributed, with 50% reporting attendance in INSPIRE-related orientations and 50% indicating no such participation. Perceptions regarding the effectiveness of orientation programmes were divided, as 50% of HOIs agreed that the orientations were effective, whereas the remaining 50% disagreed.

With respect to institutional practices, 66.66% of HOIs reported that their schools conduct orientation sessions or workshops related to INSPIRE-MANAK, while 33.34% indicated that no such programmes are conducted. HOIs' assessment of teacher involvement in student projects varied, with 50% rating it as good, 33.33% as sufficient, and 16.66% as insufficient.

HOIs identified multiple factors hindering effective student participation in the INSPIRE-MANAK Scheme. Insufficient guidance (33.33%) and lack of awareness (33.33%) were reported as the most prominent barriers, followed by lack of resources (16.66%) and time constraints (16.66%). For improving participation and outcomes, HOIs recommended increased organization of workshops and training sessions (60.14%), enhanced availability of resources (28.58%), and provision of printed instructional materials (11.28%). Additionally, the need for special training camps at the school level was emphasized to strengthen sustained student engagement and innovation.

Across stakeholder groups, awareness of INSPIRE-MANAK was high at the institutional leadership level, with HOIs showing complete awareness, largely mediated through local education authorities. However, this top-down dissemination was not consistently translated into structured capacity building, as only half of the HOIs and a limited proportion of teachers reported participation in formal orientations, indicating a diffusion gap between policy communication and pedagogical preparedness.

Teacher involvement, as perceived by HOIs, ranged from sufficient to good for a majority, yet the persistence of insufficient guidance reported as a major barrier suggests qualitative limitations in mentoring depth rather than mere participation. Students' engagement appears constrained not by motivation alone but by systemic issues such as limited guidance, inadequate resources, and time constraints, highlighting a mismatch between scheme objectives and ground-level support mechanisms.

Institutional initiatives like school-level orientations were reported by two-thirds of HOIs, but the divided perception of their effectiveness reflects inconsistencies in design, duration, and follow-up. The strong preference across stakeholders for workshops, special training camps, and improved resource availability underscores the demand for experiential and sustained innovation ecosystems rather than one-time sensitization activities.

Discussion

NEP-2020 emphasizes experiential learning, inquiry-based pedagogy, and early exposure to research and innovation, which aligns closely with the objectives of INSPIRE-MANAK (Government of India, 2020). However, the present findings indicate that while institutional awareness exists, implementation remains uneven due to limited teacher capacity building and fragmented mentoring structures.

The identified barriers viz., insufficient guidance and lack of awareness, echo earlier studies which highlight teachers' pivotal role as innovation facilitators rather than mere supervisors (Nair & Nanda, 2018; Gupta *et al*., 2021). Without structured professional development, teachers may struggle to scaffold students' ideas into viable scientific models, weakening the scheme's transformative potential.

The emphasis on workshops and school-based training camps supports constructivist learning theories, which argue that creativity and innovation flourish through sustained engagement, collaboration, and access to resources (Kolb, 2015). NEP-2020 similarly advocates for teacher autonomy, continuous professional learning, and institutional flexibility, suggesting that INSPIRE outcomes could be significantly enhanced through decentralized, school-embedded innovation hubs.

Building upon these findings, the emerging evidence points toward a structural incongruity between policy articulation and institutional enactment within school-based innovation frameworks. The simultaneous presence of high institutional awareness and relatively low levels of student participation reflects a classic case of policy–practice decoupling, wherein formal compliance with programme mandates does not necessarily translate into meaningful pedagogical transformation (OECD, 2019; Mir, 2026; Mir *et al*., 2026). Rather than functioning as a deeply embedded educational process, participation in INSPIRE–

MANAK appears to remain peripheral, reinforcing the notion that policy visibility alone is insufficient to drive systemic change. This disjunction is further conceptualized as a conversion deficit, where awareness, orientation, and initial exposure fail to culminate in sustained engagement, iterative idea development, and progression along the innovation continuum (Mir and Wani, 2026).

From a theoretical perspective, the findings challenge the assumptions of linear innovation models embedded within policy frameworks, instead aligning with UNESCO's (2021) argument that educational transformation requires the cultivation of holistic, relational ecosystems grounded in collaboration, reflexivity, and institutional coherence. In this context, the role of teachers emerges as critically under-realized. While policy frameworks position teachers as central agents of innovation, the empirical evidence suggests that their function remains largely facilitative and episodic, constrained by limited access to sustained professional development and the absence of structured mentoring architectures (Mir, 2026; Mir *et al*., 2026). This gap undermines the constructivist premise that learners construct knowledge through guided inquiry and iterative engagement (Kolb, 2015), thereby restricting the pedagogical depth of innovation practices.

Furthermore, the findings expose a disjunction between normative institutional support and its operational translation. Although institutional leadership is often reported as supportive, such support lacks the characteristics of distributed instructional leadership and strategic alignment necessary for fostering innovation cultures (OECD, 2019). As a result, implementation tends to be fragmented, adhoc, and event-centric, rather than systemically integrated into curricular and co-curricular processes (Mir *et al*., 2026; Mir *et al*., 2026). This episodic engagement not only limits the scalability of student innovation but also constrains the development of sustained innovation competencies, which are central to 21st century learning paradigms.

Critically, the persistence of barriers such as inadequate mentoring, limited resources, and weak institutionalization suggests that INSPIRE–MANAK operates within a semi-institutionalized innovation space where policy intent is acknowledged but not fully internalized within the organizational and pedagogical structures of schools. This aligns with broader critiques in global education reform discourse, which caution against over-reliance on programme-based interventions without corresponding investments in institutional capacity and cultural transformation (UNESCO, 2021).

Therefore, the challenge extends beyond enhancing participation metrics to reconfiguring the underlying educational architecture. A shift from scheme-driven implementation toward the development of endogenous innovation ecosystems within schools which is characterized by continuous teacher learning, embedded mentoring systems, collaborative leadership, and integration of innovation within everyday pedagogical practice is required. Without such systemic realignment, the transformative potential of INSPIRE–MANAK is likely to remain constrained within symbolic compliance rather than substantive educational change.

Recommendations:

1. **Enhancement of Awareness Programmes**: Regular awareness sessions and workshops may be conducted for students, teachers, and school leaders to emphasize the scheme's benefits and opportunities.
2. **Integration of Flagship Programmes into the Curriculum**: INSPIRE-MANAK activities need to be embedded into the school curriculum to encourage active participation and normalize innovation as part of students' academic journey.

3. **Teacher and Institutional Involvement**: A comprehensive training and incentives for teachers and school heads may be provided to foster a supportive environment, enhancing their role as mentors and advocates for the scheme.
4. **Recognition and Credit Points**: Employability credits, certificates, or awards for participating students may be offered to increase motivation and long-term engagement.
5. **Allocation of Resources Effectively**: Adequate funding and materials, including mentorship programmes may be ensured to support students, particularly in resource-limited regions.

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