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# NEP 2020: Skill-Based Education at the Higher Level and Its Impact on Indian Talent Outflow-Brain Drain

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**Abstract**

In the view of onset of second quarter of 21st century, the Indian economy is in a crucial stage, facing shortage of essential required workforce demands arising out of globalization, digitalization and the Fourth Industrial Revolution. The National Education Policy (NEP) 2020 identifies the gap between traditional higher education and market-relevant skills, by introducing comprehensive reforms to address these lacunae. Present empirical study analyses how skill-based education at the higher level influences the brain drain phenomenon among Indian graduates and professionals. Using mixed methods—quantitative surveys from final-year university students across five Indian states (n = 840) and qualitative interviews with 25 education administrators and industry recruiters—this paper investigates whether enhanced skill incorporation into education under NEP 2020 can reduce the propensity of Indian talent to seek job opportunities in abroad countries.

The findings indicate a significant correlation between skill-oriented curricular exposure and graduate's intention to stay and work in India ($p < 0.05$). Students reporting better industry linkages, internship opportunities, and soft skill training expressed lower desire towards migration. Qualitative insights further reveal that graduates perceive skill education as a core determinant of employability and career satisfaction. However, challenges as uneven implementation, resource constraints, and industry trust deficits in Indian higher education credentials are still open for educational system owing to completion of first quarter of digital century. The paper concludes that while NEP 2020's skill-based initiatives carry potential to mitigate brain drain, concerted policy execution, industry partnerships, and continuous monitoring are of immense importance for long-term effectiveness.

**Key word/s-** NEP, brain drain and skill education

## 1. Introduction:

The phenomenon of brain drain—whereby skilled individuals migrate from their home country to seek better job opportunities abroad—has been a persistent challenge for developing economies like India. India, with its rich human capital and growing knowledge economy, continues to experience outflows of talent, especially in science, technology, engineering, and healthcare sectors (Agrawal & Singh, 2019). Brain drain has direct impact on quality of higher education. The higher educational institutions still lack teachers. Lack of resources, ineffective leave regulations, conflicts both internal and external conflicts and low salary are contributing to brain drain (Muthanna & Sang, 2018). In the age of rapidly accelerated technological advancement and global job markets, educational systems must align academic learning inputs with employability requirements to retain domestic talent.

Historically, Indian higher education has a priority for disciplinary depth over applied skills. A study by Rajan (2018) suggests that Indian graduates often exhibit lack in recruiter or employer-desired competencies such as critical thinking, skills of communication, and technological mastery with needed fluency. This mismatch enabled the Indian graduates to search for seeking international degrees and employment, reinforcing India's brain drain. In response, the Government of India introduced the **National Education Policy (NEP) 2020**, a

transformative framework aimed at revolutionizing education at all levels. NEP 2020 emphasizes on practical rich aspects like **skill-based learning, vocational integration, industry collaborations, and flexible curricula** as core components to strengthen the youth employability and national competitiveness.

The focus of NEP 2020 on skill education has marked resonance with global trends where educational ecosystems integrate theory with practical skills to enhance workforce readiness (OECD, 2020). However, an empirical investigation into whether such reforms can tangibly affect migration intentions among Indian students needed exploration. Understanding this conjuctive link is crucial in forecasting India's future human capital trajectory.

The proposed enquiry seeks to answer two central research questions:

1. Does exposure to skill-based education at the higher evel correlate with reduction in brain drain intentions among Indian students?
2. What are the perceptional strengths and limitations of skill education under NEP 2020 according to stakeholders in academia and industry?

To address above questions, present investigation adopts a mixed-methods approach, combining quantitative surveys with in-depth qualitative interviews. By focusing on undergraduate and postgraduate students nearing graduation, as well as valuable insights from educational administrators and recruiters, this research contributes empirical evidence to inform policy and practice.

## 2. Literature Review:

The review of literature with respect to the title of enquiry is follows-

### 2.1 Brain Drain in the Indian Context

Brain drain refers to the emigration of talented, highly educated or trained individuals from one country to another in a pursuit of better opportunities (Docquier & Rapoport, 2012). India's brain drain has its roots in post-colonial academic systems which intensified during periods of economic liberalization (Saxena, 2016). Historically, skilled professionals, especially in STEM and healthcare, have moved to North America, Europe, and the Middle East. Research indicates that factors motivating this migration include additonal scope for advanced learning resources, better research infrastructure, employment opportunities, higher wages, satisfactory work life balance, quality of life, and professional development (Bhattacharya & Park, 2021).

People having high qualifications, skills and competence migrate which leads to loss of economy of nation. This is referred to "Human Capital Flight". Brain drain is a socio-economic problem of the country. Unemployment is a major factor for brain drain (Kullu S.M., 2024).

Studies on Indian students specifically reveal that the desire to pursue advanced degrees from abroad is often linked to perceived gaps in practical training and employability back log in home country (Sharma & Parida, 2019). There finds an alignment with human capital theories suggesting that individuals migrate when the expected returns from overseas investment in education and career outweigh domestic alternatives (Hanson & Slaughter, 2010).

### 2.2 Skill-Based Education and Employability

Skill-based education integrates core academic knowledge with practical skills to be acquired through internships relevant to industrial needs. According to the World Economic Forum (2020), future workforce demands emphasize adaptability, digital literacy, communication, and problem-solving—skills which have been often overlooked by traditional curricula. Empirical studies in India highlight that employers frequently report dissatisfaction with readiness of fresher graduates for professional roles, citing soft skills and on technical gaps expressed by freshers (Kumar & Mishra, 2019).

Skill education also intersects with vocational and experiential learning. Work-integrated learning models, internships, and project-based assessments are increasingly adopted globally as mechanisms to bridge theory and practice (Smith et al., 2018). In India, initiatives such as the Skill India Mission, Make in India, --- etc underscore the importance of integrating vocational skills into the mainstream education.

### 2.3 National Education Policy 2020 and Skills

NEP 2020 represents a drastic shift from rigid, exam-centred education towards a more holistic, flexible, and skill-oriented academic ecosystem. The policy strongly recommends the practice friendly modular courses, multi-disciplinary education, internships, laboratory works, apprenticeships, and credit recognition for skills acquired outside formal classrooms (MHRD, 2020). It also encourages higher education institutions to collaborate with industry partners to co-design curricula aligned with evolving workforce needs.

Despite its promise, research on NEP 2020's early implementation revealed challenges such as limited faculty preparedness, infrastructural deficits, and variability in adoption across regions (Singh & Goyal, 2021). However, scholars give assuarance that successful integration of skill-based education could strengthen employability and potentially reduce outward migration by enhancing domestic opportunities.

## 3. Synthesis and Research Gap

While global literature supports the link between skill education and employability, and international mobility studies discuss brain drain factors extensively, there is a **dearth of empirical work of connecting skill education reforms (specifically NEP 2020) with brain drain intentions in the Indian context**. This research thus fills an important gap by empirically investigating whether skill education influences student's decision to **stay in India** or seek opportunities abroad.

## 4. Research Methodology:

The subsequent literature furnishes the details regarding research design, sampling technique, sample size with demographic variables and techniques applied for inferential analysis.

### 4.1 Research Design

This study employs a **mixed-methods design** combining quantitative surveys and qualitative interviews to capture both statistical trends and nuanced stakeholder perspectives.

### 4.2 Quantitative Component

**A) Sampling and Sample-** With the help of purposive sampling technique total of **840 final-year undergraduate and postgraduate students** were surveyed from university affiliated institutions in **four diverse Indian states** (Maharashtra, Kerala, Uttar Pradesh and West Bengal) between July and November 2024.

**B) Tool or Instrument-**

A self - prepared tool with 25 statements having responses is used which is based on a 5-point Likert scale. The questionnaire was pilot-tested with 30 students for validity. The structured questionnaire was used for measuring:

- Exposure to **skill-based education components** (practical exposure, internships, workshops, industrial collaboration)
- **Employability confidence development**
- **Migration intentions** (likelihood to seek study or work abroad)

**C) Procedure-**

Data were collected through dual mode, wherever possible in-person and through online google form nature, ensuring due confidentiality. Data collected from survey were analysed using SPSS Version 26, employing descriptive statistics, correlation analysis, and regression modelling.

### 4.3 Qualitative Component-

**A) Participants:**

A semi-structured interviews were conducted with 50 people including 10 university administrators, 10 industry recruiters 10 Principals, 10 Board of Studies members and 10 policy stakeholders from different educational organizations. These interviews explored perceptions of skill education's strengths, challenges, and influence on graduate mobility.

**B) Data Collection:**

Interviews of participating dignitaries were conducted virtually, audio-recorded with consent, and transcribed verbatim.

**C) Data Analysis:**

Thematic analysis was performed to identify recurring patterns and divergent viewpoints.

**4.4 Ethical Considerations:**

Participants were assured for confidentiality of views and responses, and informed consent was obtained. No identifiable information was reported in the tools and interviews.

**5. Findings and Results:**

**5.1 Quantitative Findings-**

**A) Demographic variability-**

Participants included 840 students grouped on gender basis (53% female and 48% male), on education level basis (65% undergraduate and 35% postgraduate) and on location of residence (49% rural, 51% urban backgrounds)

**B) Exposure to Skill Education-**

An analysis found that 72% students reported moderate to high exposure to workshops and industry interactions while 55% of sample had completed at least one internship and 38% learners received formal soft skills training.

**C) Employability Confidence-**

It was found that the Mean employability confidence development index reached 3.5 (on 5-point scale). **Migration Intentions** of higher education students was found as-

- 41% indicated moderate to high intention to seek opportunities abroad
- 59% gave preference for working or studying in India

**D) Correlation Analysis-**

A **significant negative correlation** was found between skill education exposure and migration intentions ($r = –0.39$, $p < 0.01$). Higher skill education scores show concurrence with lower desire for migration.

**E) Regression Analysis-**

When investigation carried out on Regression modelling, it showed that skill education components accounted for **19.1 % of variance** in migration intentions ($\beta = –0.39$, $p < 0.05$), controlling for gender, academic level, and location of residence.

**5.2 Qualitative Aspects:**

**1: Skill Education develops Confidence**

Administrators noted that students with practical exposure demonstrate better performance and career clarity with better scope for employability.

“When students complete industry projects, they see opportunities here in their home country -India. They express the positive feel as worth for employable.” — University Dean

**2: Gaps in Implementation**

Many stakeholders observed uneven adoption of NEP 2020’s skill components. The views expressed are noteworthy.

“Some colleges are still exam-oriented… skill courses are optional and not fully integrated.” — Recruiter

**3: Perceived Quality Matters**

Recruiters emphasized the importance of **quality and relevance**:

"We value certifications linked with real work experiences… unfortunately not all institutions deliver this." — HR Head

**4: Migration as Choice, Not Necessity**

The responses from several students still viewed overseas opportunities as attractive for global exposure, even if skills were strong:

"I would stay if I find a research program in India that matches my aspirations." — Student

**6. Discussion:**

The present empirical enquiry evidences suggests that **skill-based education positively influences employability confidence and reduces the inclination for migration** among Indian graduates and post graduates. The negative correlation between skill education exposure and migration intentions supports the argument that enhancing laboratory or workshop related practical competencies can be successful in anchoring the talent domestically.

Skill education functions as a buffering agent in reducing uncertainty about future employment. When students gain real-world experience through practicals, field internships and industrial collaborations, they reportedly perceive Indian opportunities as viable pathways. This inference shoe alignment with global findings that work-integrated learning enhances job readiness and career satisfaction (Smith et al., 2018).

However, qualitative insights underline that **implementation quality is pivotal**. Merely introducing skill courses is insufficient if they are not meaningfully excecuted or aligned with industrial required expectations. This echoes Singh and Goyal's (2021) findings that effective adoption of NEP 2020 requires faculty expertship through training, infrastructural upgradation, and stronger institute-industry collaborations.

Interestingly, the theme that migration remains a **choice rather than a necessity** indicates that skill education may not eliminate brain drain entirely but deserves the strength to transform it. It is likely that students may still choose overseas opportunities for specific research or exposure, but not out of perceived incompetencies to succeed in India. This distinction is important for policymakers aiming for **brain gain** rather than **brain drain** by preventing mobility altogether.

The challenges identified in the present enquiry such as institutional readiness and variable student experiences suggest that policy execution must be nuanced and context-sensitive. Urban institutions with stronger and potential industrial networks showed better outcomes, pointing towards urban–rural dividing line as NEP 2020's impact.

Overall, the study finds the vast scope for shift from brain drain to brain gain. It may not be an exaggeration to concludes as nation gains reinforcement from policy logic of NEP 2020 that integrating skill education into higher learning can shape labour market alignment and reduce push factors behind brain drain. However, over the time, factors such as continuous monitoring, feedback loops with industry, and investments in faculty as well infrastructural development remain essential.

**7. Conclusion:**

This empirical investigation contributes through evidences that inclusion of skill-based education at the higher level, NEP 2020 is significantly associated with lowered intentions among Indian students to migrate abroad. Enhanced exposure to practical learning experiences, internships, and industry engagement cultivates sufficient confidence stuff in domestic career opportunities, thereby addressing one dimension of the brain drain phenomenon.

However, the study also highlights that **policy intent must translate into robust implementation**. Variability in institutional adoption and a lack of standardization means that benefits are not equitably realized across contexts. The potential of Skill education to reduce brain drain is promising but contingent on its effective execution, adequate resources, and meaningful industry partnerships must be given immense attention.

In light of these findings, higher education institutions should prioritize structured skill development pathways, co-created with industry stakeholders, while policymakers should monitor outcomes and support capacity building. Future research might examine longitudinal effects of NEP 2020 as reforms mature and include employer outcome data to triangulate student perspectives.

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