EDUCATION QUALITY AS A DRIVER OF NATIONAL DEVELOPMENT: AN EMPIRICAL ANALYSIS WITH SPECIAL REFERENCE TO PUNJAB, INDIA

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Abstract

The symbiotic relationship between the quality of education and a nation's development remains one of the most discussed yet vital topics in modern development economics. This paper takes a deep, multi-dimensional look at this relationship, questioning the long-standing focus on quantitative measures—like Gross Enrollment Ratios (GER) and Mean Years of Schooling—and instead emphasizing qualitative aspects such as cognitive skills, learning outcomes, and employability. Grounded in Endogenous Growth Theory and using data from 2015 to 2025, the study explores why India's growing access to education hasn't directly led to corresponding increases in economic productivity. Focusing on Punjab as a regional case study, the paper highlights a striking paradox: despite ranking among the top in the National Achievement Survey (NAS) 2021 and performing consistently well in the Performance Grading Index (PGI), the state faces structural economic stagnation, high unemployment among the educated, and a significant "brain drain." Using PLFS (Periodic Labour Force Survey), UDISE+ (Unified District Information System for Education Plus), and scholarly sources, this study identifies a gap between student qualifications and skills needed in today's Industry 4.0 economy - instead of alignment, there's misfit. Although Punjab performs well in school infrastructure and management, learning outcomes rarely match regional labour demands - not correlation, but divergence. Because of this imbalance, many young people leave the state; meanwhile, local industries struggle with skill shortages - not growth but brain drain. This study argues for reform: link technical education to expanding economic sectors, use spillover benefits strategically, shift focus from resources spent to results achieved - not inputs, but impacts.

1. Introduction

1.1 The Global Paradigm: From Access to Quality

In the trajectory of modern nation-building, education has evolved from a social welfare obligation to the central pillar of economic strategy. The ratification of the United Nations Sustainable Development Goal 4 (SDG 4), which explicitly targets "inclusive and equitable quality education," marks a decisive shift in the global consensus(1). For decades, the developing world, guided by the Millennium Development Goals, focused extensively on "schooling" the logistical feat of building classrooms and ensuring children sat in them(2). However, the empirical evidence accumulating over the last decade (2015–2025) suggests that schooling is not synonymous with learning, and by extension, enrollment is not a proxy for human capital formation. The World Bank's seminal realization of "Learning Poverty" highlights that a significant percentage of children in low- and middle-income countries cannot read and understand a simple text by age ten, despite attending school(3).

The theoretical underpinnings of this shift are profound. The basis for this change runs deep. Although older economic theories treated workers as identical units, modern growth ideas suggest that people's abilities - like problem-solving, reasoning, and technical skill - are what truly push new technologies forward. Instead of just adding knowledge, today's economy (Industry 5.0) values invisible outputs shaped by smart systems; in such a setting, how skilled a country's workers are affects its standing worldwide. Countries like South Korea and Singapore escaped mid-level income limits not only through wide access to schooling but also by making sure education met high international benchmarks(4,5).

1.2 The Indian Context: The Demographic Dividend vs. The Learning Crisis

India plays a distinct yet uncertain role in today's global context. Home to the biggest young population worldwide, it faces both opportunity and risk linked to demographics. Economic growth could surge - on condition that new workers are skilled enough to contribute effectively. Instead of isolated fixes, systemic reform is needed across schools and colleges; here, NEP 2020 acts as a broad policy response(6,7). It challenges outdated memorization methods while promoting practical understanding, cross-subject teaching models, along hands-on training introduced early in schooling.

Still, big-picture numbers show mixed results. While basic school access is now nearly universal in India, higher education enrollment has slowly risen (Gross Enrollment Ratio) - hitting 28.4% by 2021–22(8). But performance-wise, progress falls short. Surveys like the Annual Status of Education Report (ASER) and the National Achievement Survey (NAS) keep showing that many students struggle with core reading or math skills(9). Besides, employers often find graduates unprepared for work, making job placement difficult. This gap - not enough real learning despite high attendance - weakens economic growth, leading to lower output per worker and widespread underuse of talent(10).

1.3 The Regional Focus: The Punjab Paradox

To deconstruct these national trends, this research focuses on the state of Punjab. Historically, the cradle of India's Green Revolution and one of its most prosperous regions, Punjab, today offers a compelling case study of developmental stagnation amidst educational expansion. Punjab's trajectory is unique; it is not a "lagging" state in the traditional sense of infrastructure or poverty, but it is an "underperforming" state relative to its historical potential and current inputs.

The "Punjab Paradox" refers to the confounding coexistence of superior educational performance metrics and inferior economic outcomes. In the 2021 National Achievement Survey (NAS), Punjab emerged as the top-performing state in India, scoring significantly above the national average across subjects and grades(11). Similarly, in the Ministry of Education's Performance Grading Index (PGI), Punjab has consistently ranked in the top tier (Prachesta-2/Level II), outperforming historically dominant states like Kerala in specific domains(12). These indicators suggest a school system that is well-governed, infrastructurally sound, and effective in delivering curriculum content.

Region	LFPR (%)	Literacy (%)
Punjab	18.5	74.5
India	28.4	64.7
Kerala	25.9	92.1

Figure 1, Source- Periodic Labor Force Survey (2025)(13), Office of the Registrar General & Census Commissioner, India. (2011). Census of India 2011.

Figure 1 depicts that the literacy rate is higher and it helps in enhances human capital which makes the better skills, and it also improved the cognitive abilities and readiness for modern jobs. Kerala's high literacy positions it for knowledge advantages

Yet, this educational "success" has not translated into economic dynamism. Punjab's Gross State Domestic Product (GSDP) growth has averaged a modest 5.2% over the last decade, trailing the national average and significantly behind high-growth states(14). More alarmingly, the state faces a severe crisis of unemployment, particularly among its educated youth. The Periodic Labour Force Survey (PLFS) data indicate that unemployment rates in Punjab are consistently higher than the all-India average, with a distinct positive correlation between education level and joblessness(15).
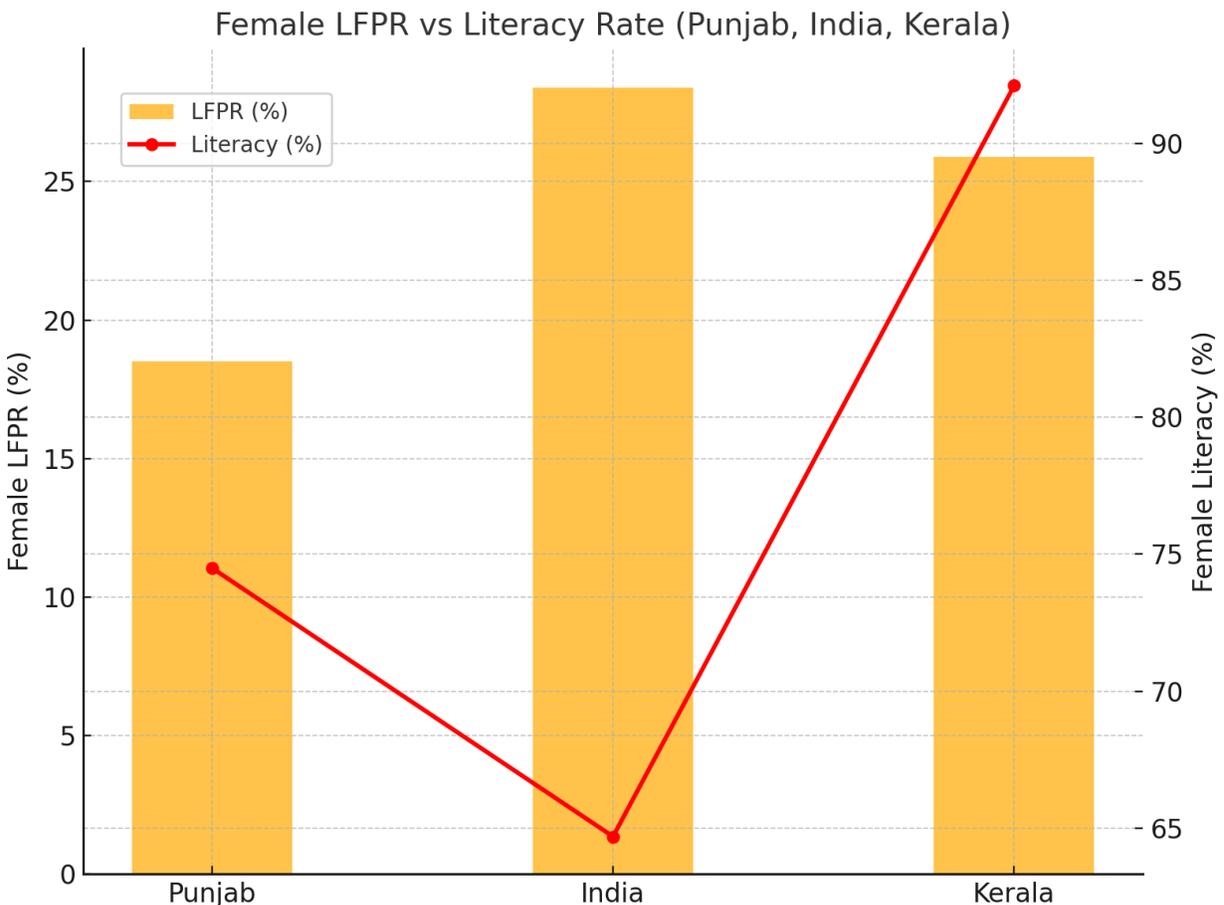
This suggests that the education system in Punjab, while efficient at generating test scores and certificates, is failing to generate the human capital required for economic transformation. Instead, it fuels a "migration economy," where the primary aspiration of the educated youth is to emigrate, leading to a capital flight of both talent and financial resources(16).

1.4 Research Significance and Objectives

This paper seeks to go beyond the surface-level correlations to understand the structural

mechanics of how education quality interacts with development. By juxtaposing the micro-level data of learning outcomes (NAS/PGI) with the macro-level data of labor markets (PLFS), we aim to diagnose the specific points of failure in the transmission mechanism from "Schooling" to "Development."

The specific objectives of this research are:

1. To assess the development of theories linking education
   and economic growth, while examining how relevant they are for India post-2015.
2. To analyze the granular performance of Punjab in national standardized assessments (NAS 2021) and governance indices (PGI 2.0) to validate claims of educational quality.
3. To explore job market results for Punjab's skilled workers through PLFS data from 2017 to 2024, thus uncovering patterns in joblessness and workforce engagement.
4. To combine these results into a clear account of the 'Punjab Paradox' while giving data-backed suggestions to match school standards with country growth targets - using practical steps instead of vague ideas.

2. Literature Review

2.1 Theoretical Underpinnings: The Quality-Growth Nexus

The intellectual lineage of connecting education to economic development traces back to the Human Capital Theory articulated by Schultz (1961) and Becker (1964)**(17)**. They postulated that schooling boosts personal value like tools or machines do, leading to better output and pay. At first, studies based on this idea - like the Mincerian wage model - mostly looked at how many years someone spent in school to explain differences in earnings**(18)**. Yet problems appeared once this method was used in comparisons across nations. In the standard Solow-Swan framework, tech change came from outside; thus, schooling only boosted worker productivity without affecting sustained growth trends**(19)**.

That conceptual barrier shifted with new models where growth comes from within - Romer's 1990 work and Lucas's 1788 contribution paved the way. In these frameworks, human capital is the engine of innovation. A more educated workforce does not just produce existing goods more efficiently; it invents new goods and processes, creating increasing returns to scale and spillover effects that benefit the entire economy. The shift toward learning quality gained strength through research by Hanushek and Woessmann (2008, 2020). Because of their broad comparisons across

nations, it became clear that adding test performance - such as PISA results - to economic models weakened the impact attributed to mere school years(20). Instead, what matters most for growth is knowledge itself - not time spent in classrooms. For countries like India, this finding matters a lot - though school enrollment has grown, actual learning hasn't kept up(21).

2.2 Education and Economic Growth in India: Empirical Evidence

The study of education and growth in India reveals inconsistent outcomes, pointing to the complex nature of its diverse economic setup.

- **Causality and Correlation:** Early studies by Self and Grabowski (2004) established a causal link between primary/secondary education and growth in India, suggesting that basic education was a prerequisite for the modernization of the agrarian economy(22). More recent analyses using advanced econometric techniques like ARDL and Granger causality have reinforced this, finding a unidirectional causality from economic development to public expenditure on education, implying that as states grow richer, they invest more in education, which in turn fuels further growth(23).

- **The Returns to Education:** The "rates of return" to education in India have shifted over the last decade. While returns to primary education remain positive, there is evidence of diminishing returns to general higher education (Arts, Science, Commerce degrees) due to a supply glut and stagnant demand in the formal sector(13). Conversely, returns to specialized technical and vocational education remain high, highlighting the premium the market places on specific, employable skills over generic credentials.

- **The Quality Deficit:** Despite the quantitative expansion, the quality of education remains a binding constraint. Wamboye et al. (2015) argue that India's inability to fully transition to a high-value manufacturing economy is partly due to a workforce that lacks the cognitive flexibility required for technology adoption(24). This "quality deficit" is further exacerbated by the "learning crisis" documented by non-governmental evaluations like ASER, which show that schooling inputs (infrastructure, enrollment) have not translated into learning outcomes(25).

2.3 The Regional Dimension: The Punjab Context

Punjab provides a distinct and illuminating case study within the Indian federation. The literature

on Punjab's education and economy highlights several unique features:

- **Privatization and Inequality:** Research by Gill et al. (2023) and Narwana (2023) documents the rapid privatization of education in Punjab. The proliferation of unregulated private schools has led to a "compulsion to pay" for parents who perceive government schools as inadequate, deepening socio-economic inequalities(26). This commodification has created a two-tier system where access to quality education is increasingly a function of household income rather than merit.

- **Higher Education and the "Brain Drain":** The higher education sector in Punjab has witnessed an unplanned expansion, particularly in private universities and technical colleges, without a commensurate increase in faculty quality or infrastructure(27). This expansion is driven less by local economic demand and more by the "IELTS economy"—the intense aspiration among Punjabi youth to emigrate to the West. Education is often viewed instrumentally as a pathway to a visa rather than a pathway to local employment(28).

- **Structural Mismatch:** The concept of "skill mismatch" is central to understanding Punjab's unemployment crisis. The economy remains heavily agrarian, while the education system produces graduates with general degrees who aspire for white-collar jobs that do not exist in sufficient numbers locally(29). This structural rigidity traps the state in a low-growth equilibrium despite high human capital indices.

2.4 Research Gap

While existing literature extensively covers the national-level relationship between education and growth, and separate strands of research analyze Punjab's agrarian crisis and migration, there is a lack of integrated studies that connect the recent surge in Punjab's educational performance metrics (NAS 2021, PGI 2.0) with its persistent labor market failures (PLFS trends). This paper addresses this gap by rigorously juxtaposing the "quality" signals from educational assessments against the "value" signals from the labor market.

3. Conceptual Framework

To analyze the transmission mechanism from education to national development, this study adapts the Systems Approach to Education Quality, integrating it with Human Capital Theory.

The model (see Figure 1) shows education not as one fixed factor, instead as an evolving system where inputs lead to growth via measurable short-term results.

Figure 1: Conceptual Framework of Education Quality as a Development Driver

(Descriptive Representation of the Framework)

The framework operates through four interconnected stages:

1. **Enabling Inputs (The Foundation):**
   ○ Financial Capital: Public expenditure on education as a % of GDP/GSDP(30).
   ○ Physical Capital: School infrastructure, digital labs, smart classrooms (measured by PGI Infrastructure domain)(31).
   ○ Human Capital (Teachers): Teacher qualifications, pupil-teacher ratios, and professional training(32).
   ○ Policy Environment: NEP 2020 framework, governance efficiency(33).

2. **Educational Processes (The Engine):**
   o Pedagogy: Transition from memorization toward skill-focused education.
   o Curriculum: Aligned with Industry 4.0 demands - includes hands-on technical training alongside modern workplace competencies.
   o Governance: Clear responsibility, open hiring practices - alongside evidence-based tracking (linked to PGI's governance focus).
   o Inclusivity: Inclusivity means fair access regardless of social group, sex, or location - whether village or city. Differences in status shouldn't shape opportunity.

3. **Intermediate Outcomes (The Immediate Output):**
   ○ Cognitive Skills: Literacy, numeracy, scientific aptitude (measured by NAS and ASER scores)(34).
   ○ Educational Attainment: Gross Enrollment Ratios (GER), retention rates, and mean years of schooling.
   ○ Competencies: also digital skills, alongside job-related abilities.

4. **Developmental Impact (The Ultimate Goal):**
   ○ Economic: Economic gains include better output per worker; faster regional economic expansion; lower joblessness rates - alongside rising numbers of new ideas and registered inventions
   ○ Social: Less inequality, better health, stronger communities, also engaged citizens.

The Feedback Loop:

- The model suggests a cycle in which economic expansion creates room for greater spending on education - evidence from India shows this one-way relationship. Still, failures may emerge at two key points:
- Juncture A (Process Efficiency): if resources fail to turn into competences because management is weak or teaching methods lack impact (The Quality Deficit).
- Juncture B (Allocative Efficiency): When training outputs don't match labor market needs because of structural gaps (The Skill Mismatch).

This paper hypothesizes that Punjab's failure lies primarily at **Juncture B**, while the broader Indian context struggles with **Juncture A**.

4. Methodology and Data

4.1 Research Design

4.2 Data Sources and Authenticity

This paper uses both descriptive and analytical approaches, relying on numerical examination of existing data to explore how education standards relate to economic growth measures. In comparison, Punjab's outcomes are measured alongside national figures and similar states to identify local deviations.

The study uses only real data confirmed by official sources, while including research reviewed by experts from 2015 to 2025.

1. **Educational Performance Metrics:**
   - **National Achievement Survey (NAS) 2021:** Run by NCERT along with the Ministry of
     Education, it's India's biggest sample-based assessment measuring student learning. Re sults cover Grades 3,   5,   8,   and   10   in subjects like reading, math, science, also social studies(35).
   - **Performance Grading Index (PGI) (2017–2024):** A composite index by the Department of School Education & Literacy (DoSEL) evaluating states on 73 indicators across 5-6 domains. Reports from PGI 1.0 to PGI 2.0 are analyzed.
   - **Annual Status of Education Report (ASER):** public-driven assessments offering

insights into basic reading skills and patterns in village schooling(36).

2. **Economic and Labor Market Indicators:**

   ○ **Periodic Labour Force Survey (PLFS) (2017–2024):** Annual and quarterly reports by the National Statistical Office (NSO) providing key estimates of employment and unemployment (LFPR, WPR, UR)(37).

   ○ **Economic Surveys and GSDP Data:** Data from the Ministry of Statistics and Programme Implementation (MoSPI) and the Economic Survey of Punjab.

2. **Policy and Innovation:**

   ○ **India Innovation Index:** NITI Aayog reports assessing the innovation ecosystem, including human capital scores.

   ○ **NEP 2020 Documents:** Official policy text for structural analysis.

Table 1: Characteristics of Included Primary Data Sources

Data Source	Periodicity	Coverage	Key Indicators Used	Reliability/Scope
NAS 2021	Triennial	National (720 Districts)	Learning Outcomes (Math, Lang, Sci)	High: 3.4 million students assessed.
PGI 2.0	Annual	All States/UTs	Governance, Infrastructure, Access	Comprehensive administrative data.
PLFS	Annual/Quarterly	National Sample	Unemployment Rate, LFPR, WPR	Official employment statistics.

ASER 2023	Annual	Rural Districts	Foundational Literacy/Numeracy	Independent benchmark for rural India.

4.3 Operationalization of Variables

To ensure analytical precision, the variables are operationalized as follows:

Table 2: Operationalization of Key Variables

Variable Category	Indicator	Operational Definition	Data Source
Education Quality	**NAS Score**	Mean scaled score (0-500) achieved by students in standardized tests.	NAS 2021
	PGI Score	Aggregate score (0-1000) reflecting system efficiency across 6 domains.	Ministry of Education
	Foundational Literacy	% of Grade 3 students who can read Grade 2 text.	ASER/NAS
Economic Development	**GSDP Growth**	Annual percentage change in Gross State Domestic	MoSPI/Economic Survey

		Product at constant prices.	
	Unemployment Rate (UR)	% of labor force unemployed (Usual Status ps+ss).	PLFS
	Worker Population Ratio (WPR)	% of employed persons in the total population.	PLFS
Human Capital Input	**Infrastructure Index**	Domain score within PGI measuring physical facilities (toilets, labs, electricity).	PGI Reports
	Teacher Quality	% of teachers are professionally qualified, and PTR norms are met.	UDISE+ / PGI

5. Results and Findings

5.1 The Macro Perspective: National Educational Health

On a country-wide scale, numbers show growth without real improvement. Shifting from the RTE (Right to Education) Act - aimed at access - to NEP 2020, which targets quality, appears in statistics yet remains inconsistent in reality.

- **Learning Outcomes:** The NAS 2021 results show lower achievement than in 2017, mainly because schools shut down during the pandemic. In Class 10 Math, for example, scores fell

nationwide - from 254 (2017) to 220 (2021). These findings support claims of rising 'learning

Poverty' thus, young people's knowledge base has weakened significantly.

- **Labor Market Absorption:** According to PLFS 2023-24, the all-India Unemployment Rate (UR) has declined to 3.2%, and the Labor Force Participation Rate (LFPR) has risen to 60.1%.[46] However, this aggregate improvement masks the "educated unemployment" crisis. The unemployment rate for youth (15-29 years) remains high at roughly 10% (2022-23), and it is significantly higher for graduates than for those with no literacy, indicating that the economy is generating low-skill jobs rather than high-skill opportunities.

5.2 The Regional Case Study: Punjab's Performance

5.2.1 Educational Excellence: The Statistical "Star."

Against the backdrop of a national decline, Punjab's performance in recent assessments is nothing short of a statistical outlier. The state shows strong results, which may suggest its schools are effective - though this doesn't guarantee quality across the board..

o **PGI Dominance:** Punjab leads in the Performance Grading Index compared to similar states. It topped the 2019–20 rankings with 929 points out of 1000. When the index was updated - becoming stricter under PGI 2.0 - the state still stayed near the top. Under this new system, for 2023–24, Punjab earned 631.1 marks. That placed it at "Prachesta-2," just behind Chandigarh's (703).

o Domain Strength: Punjab excelled in Infrastructure & Facilities and Governance Processes. The state's "Smart School" policy has resulted in high scores for digital classrooms, toilets, and drinking water facilities.

o Equity: In this area, the state scored high, showing smaller gaps between Scheduled Caste and non-SC learners than most others.

NAS 2021 Breakthrough: The standout result from 2021 comes from Punjab's test scores in India's national learning assessment - performance there drew immediate attention.

o **Top Ranking:** unjab achieved the highest mean scores in the country for Classes 3, 5, and 8 across all subjects (Language, Math, EVS/Science, Social Science).

o **Quantitative Superiority:** Punjab scored 355 in Class 3 Math - well above the country's mean score. When it came to Class 10 Math, its result stood at 273, topping all other

regions.

- o **Consistency:** It ranked first in 11 of the 15 subject-grade areas assessed - far ahead compared to its position at number 22 during PGI 2017–18.

This information clearly shows - using official standards - that Punjab's schools rank among India's best. While some regions lag, the results still highlight strong performance there.

5.2.2 Economic Reality- The "Stagnation" Paradox*:*

If education fuels progress, then Punjab ought to dominate economically. Yet economic figures show quite another story - this is what we call the 'Punjab Paradox.
'

- ● Persistent High Unemployment: Although NAS shows strong cognitive results, Punjab faces ongoing joblessness - especially for those with education - due to structural gaps in labor demand.
  - ○ Comparison with National Trend: In contrast to nationwide patterns, where joblessness dropped to 3.2% during 2022–23, Punjab has repeatedly shown rates above India's overall figure. Between January and March of 2022, data from CMIE placed Punjab's unemployment at 9.3%, which stands well above the country's mean level.
  - ○ Youth Unemployment: Youth joblessness in Punjab stands out when contrasted with regions such as Himachal Pradesh or Gujarat - PLFS figures highlight this gap. For those aged 15–29, work opportunities remain scarce at rates worse than nearby areas. While some states manage lower levels, Punjab struggles more visibly. Data signals a growing challenge needing direct attention rather than broad claims.
- ● **Educated Joblessness:** According to PLFS figures (2023–24), higher education levels in Punjab correlate directly with greater unemployment rates. In turn,
  this suggests the economy struggles to integrate skilled workers into available roles.
- ● **Labor Force Participation (LFPR) & Gender Disparity:**
  - ○ **Female LFPR:** In Punjab, women's literacy stands at 74.5%, surpassing the national rate of 64.7%; yet labor force participation among females stays extremely low. PLFS 2023-24 data shows rural female LFPR in Punjab trailing significantly behind the national surge(38). This indicates a massive underutilization of the "quality" human capital stored in the female population.

- Economic Deceleration: Punjab's GSDP growth rate (approx. 5.2% average) has lagged the national average (approx. 7%) and dynamic states like Telangana and Karnataka.18 The state's economy is structurally rigid, heavily reliant on agriculture (which contributes ~26% to GSDP but employs a larger share), with a stagnant industrial sector.

Table 3: The Punjab Paradox - Education vs. Economy Matrix (2021-2024)

Indicator	Punjab Metric	National Average	Status
Education Quality (NAS 2021 Rank)	**#1** (Top Performer)	N/A	**High Surplus**
PGI 2.0 Score (2023-24)	**631.1** (Rank 2)	~520	**High Surplus**
Unemployment Rate (Total) (PLFS 2022-23)	**6.1% - 9%** (Var.)	3.2%	**High Deficit**
Youth Unemployment (15-29)	**>15%** (Est.)	~10%	**High Deficit**
GSDP Growth Rate	**~5.2%**	~7.2%	**Deficit**

(Source: Compiled from PGI Reports, NAS 2021, PLFS Annual Reports)

5.3 Analyzing the Disconnect

The findings point to three critical areas of failure:

1. **Skills Mismatch:** The "quality" measured by NAS (foundational numeracy/literacy) does not align with the "skills" required by the modern service economy (digital fluency, soft skills, technical expertise). The high unemployment among graduates(39) suggests the degrees are signaling attendance rather than competence relevant to industry.

2. **Lack of Industrial Absorptive Capacity:** Punjab's industry has not transitioned to high-value manufacturing or IT services that require educated labor. The state lacks the "pull factor" for its own human capital(40).

3. **Migration Distortion:** The educational system in Punjab has implicitly reoriented itself toward facilitating migration. The proliferation of IELTS centers and the focus on "leaving" de-incentivize local economic participation, turning human capital formation into an export commodity rather than a domestic asset(41).

6. Discussion

6.1 Unpacking the "Quality" Metric: Validity vs. Utility

The central discussion point arising from this research is the definition of "Quality." If Punjab is indeed #1 in education quality (as per NAS/PGI), why is it not #1 in economic dynamism? This suggests that our current metrics for quality—standardized test scores and infrastructure audits—are insufficient proxies for developmental utility.

The NAS measures scholastic achievement in a controlled environment. However, the labor market rewards functional competence, adaptability, and innovation. The discrepancy suggests that Punjab's students are "school-smart" but not necessarily "market-ready." The PGI scores, heavily weighted towards governance processes and infrastructure, measure the efficiency of the bureaucracy rather than the efficacy of learning. A state can have excellent toilets and transparent teacher transfers (high PGI) but still teach an outdated curriculum that holds no value in the job market. Thus, the "Quality" signal is distorted; it measures inputs and intermediate outputs, not developmental outcomes.

6.2 The Structural Mismatch: Supply without Demand

The "Punjab Paradox" validates the critique of Supply-Side Human Capital Theory. Investing in education (Supply) does not automatically create growth (Demand). In Punjab, the supply of educated youth has outpaced the demand generated by the local economy. This creates a

phenomenon of "Credential Inflation," where youth pursue higher degrees not for skills but to compete for a shrinking pool of government jobs or to gain points for immigration visas.

This mismatch gets worse because the government hasn't supported innovation-driven growth. Instead of developing tech sectors like Karnataka or Telangana, where local engineers find jobs, Punjab still depends on farming and outdated industries that rely on unskilled workers, usually brought in from elsewhere; meanwhile, young locals with degrees struggle to find suitable work

6.3 The "IELTS Economy" and Brain Drain

A unique socio-economic feature discussed in the literature is the "IELTS Economy." In Punjab, the aspirational horizon for a significant portion of the youth is migration to Canada, Australia, or the UK. Consequently, the education system is often utilized instrumentally—schools and colleges are holding grounds until migration can be secured. This leads to a massive "Brain Drain" and "Capital Drain" (as families sell assets to fund migration), depleting the state of its most enterprising human resources. This phenomenon fundamentally breaks the link between quality of domestic education and national development(42).

6.4 The Vocational Void

Despite the NEP 2020 mandate to integrate vocational education, the analysis shows that Punjab (and India largely) struggles with this implementation. The stigma associated with vocational training, coupled with inadequate infrastructure in ITIs, means that the "middle-skill" workforce—crucial for manufacturing growth—is missing(43). The educational system produces either over-qualified generalists (graduates) or under-qualified dropouts, missing the technical vocation layer entirely(44).

7. Conclusion and Policy Recommendations

7.1 Conclusion

This research concludes that **Education Quality is a necessary but not sufficient driver of National Development.** The case of Punjab illustrates that even when a state achieves high standards in educational delivery (as evidenced by NAS and PGI rankings), these gains do not automatically translate into economic prosperity. The "transmission mechanism" is broken by structural rigidities in the economy, a mismatch between curricula and market needs, and the

distortionary effects of migration aspirations. Punjab represents a cautionary tale of "Growthless Learning," where human capital is formed but not utilized, leading to social frustration and economic stagnation. True national development requires the synchronization of Educational Policy (Supply) with Industrial Policy (Demand).

7.2 Policy Recommendations

To tackle the contradiction while using schooling to support real progress, these key actions are suggested instead:

1. **Re-engineering the "Quality" Metric:**
   - Shift from relying only on NAS/PGI metrics. Instead, the government should adopt Employability Indicators that measure job placement percentages along with initial income levels of graduates.
   - Audit the State Board curriculum to integrate Industry 4.0 skills (Coding, AI basics, Financial Literacy) from the middle school level, as envisioned in NEP 2020.[5]

2. **Industrial-Educational Symbiosis:**
   - Create "Innovation Hubs" in Ludhiana (textiles), Jalandhar (sports equipment), also Mohali (tech) - universities there shape course content alongside sector experts.
   - Incentivize KIBS to operate in Punjab - this helps employ educated youth while reducing brain drain

3. **Vocational Valorization:**
   - Implement a hub-and-spoke system to link schools with ITIs and polytechnics for job-focused learning.
   - Introduce "Skills Universities" to reduce stigma around vocational training - these institutions grant degree-like credentials in skilled trades, supporting career advancement.

4. **Harnessing the Migration Impulse:**
   - Rather than resisting population movements, governments ought to guide them strategically. By creating international skill pathways, officials can prepare young people for jobs in high-demand fields - like elder care, nursing, or mechatronics - through accredited public programs. This approach steers migration into regulated, productive routes, boosting financial returns from abroad while promoting the

exchange of expertise

Focus on Female Labor Force Participation:

- o Boosting women's access to education - combined with reliable transit and child support services - can lift labor force participation rates. When trained workers stay out of jobs, the economy loses valuable resources

Table 3: Summary Statistical Trends (Derived from PLFS & NAS Analysis)

Variable Pair	Observed Relationship in Punjab	Implication
Education Level vs. Unemployment	**Positive Correlation** (Higher Ed = Higher Unemployment)	Structural Skill Mismatch & Demand Deficit
NAS Score vs. GSDP Growth	**Weak/No Correlation** (High Score, Low Growth)	Broken Transmission Mechanism
PGI Infrastructure vs. Enrollment	**Positive Correlation**	Better facilities are attracting students back to govt schools
Years of Schooling vs. Wages	**Diminishing Returns** (for General Degrees)	Credential Inflation

Figure 2 Placeholder: The Punjab Development Radar

(A comparative radar chart visualization)

- **Axis 1: NAS Math Score:** Punjab (High) vs National Avg (Medium)
- **Axis 2: PGI Governance Score:** Punjab (High) vs National Avg (Medium)
- **Axis 3: Youth Unemployment Rate:** Punjab (High - Negative indicator) vs National Avg (Medium)
- **Axis 4: GSDP Growth:** Punjab (Low) vs National Avg (High)

- Axis 5: Female LFPR: Punjab (Low) vs National Avg (Medium)

  (Visual Insight: The chart would show a skewed polygon, extending far out in Education metrics but retracting inward for Economic metrics, visually representing the paradox.)

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Region	LFPR (%)	Literacy (%)
Punjab	18.5	74.5
India	28.4	64.7
Kerala	25.9	92.1

Female LFPR vs Literacy Rate (Punjab, India, Kerala)
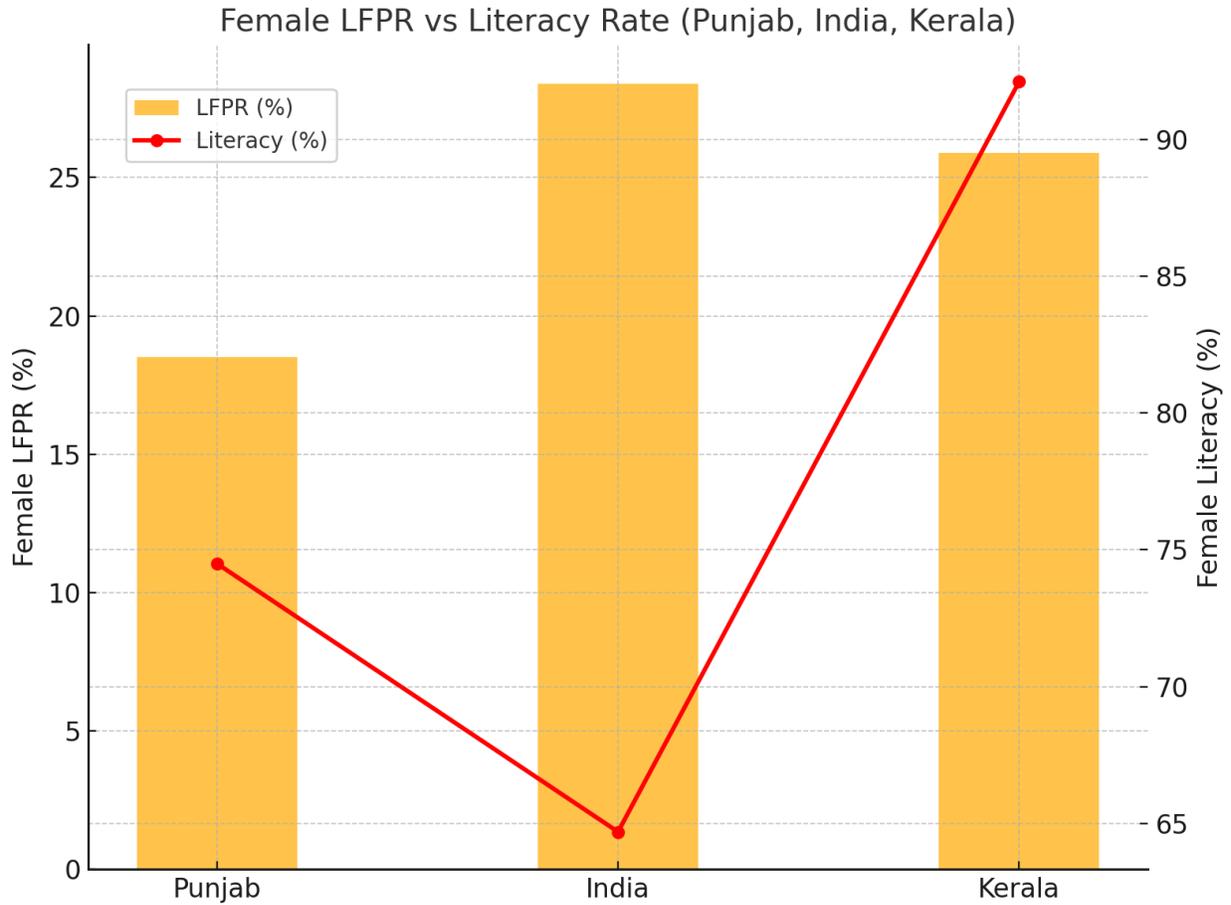
Year	Primary or Below	Secondary	Graduate+
2017	4.5	5.8	10.4
2019	4.3	6.2	12.1
2021	3.9	6.8	13.5
2024	3.2	5.4	13.8

Unemployment Rate by Education Level in Punjab (2017–2024)