

Employability and Skill Development in Undergraduate Geography Education in India

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Abstract

The expansion of higher education in India has intensified concern about whether undergraduate degrees provide graduates with capabilities that can be converted into meaningful employment and professional mobility. Geography occupies a distinctive position in this debate because it combines knowledge of human–environment relations with field investigation, quantitative analysis, cartography, Geographic Information Systems (GIS), remote sensing and other forms of spatial analysis. This paper examines the relationship between employability and skill development in undergraduate geography education in India and evaluates the extent to which recent higher-education and geospatial policies create conditions for stronger labour-market relevance. The study adopts a qualitative, analytical and secondary-data-based research design. Evidence is drawn from the All India Survey on Higher Education (AISHE) 2023–24, Periodic Labour Force Survey (PLFS) 2025, National Education Policy 2020, University Grants Commission frameworks and guidelines, the National Geospatial Policy 2022, recent government initiatives, and peer-reviewed scholarship on graduate employability and geography education. The analysis finds that geography possesses substantial intrinsic employability potential, particularly through geospatial, field-based, analytical and interdisciplinary competencies. However, this potential is not automatically converted into graduate employability. Major constraints include uneven curricular standardisation, variable institutional capacity, inadequate integration of authentic projects and work experience, weak career signalling, and limited national data on undergraduate geography outcomes. The paper argues for an outcomes-based geography curriculum combining disciplinary depth with progressively developed geospatial skills, field inquiry, data literacy, internships, applied projects and professional portfolios. Such reform can strengthen employability without reducing geography to narrowly vocational training.

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1. Introduction

Indian higher education is operating simultaneously under conditions of rapid expansion, curricular reform and changing labour-market expectations. The latest All India Survey on Higher Education (AISHE) reports total higher-education enrolment of nearly 4.5 crore students

in 2023–24, an increase of 31.5% over 2014–15. Undergraduate education accounts for approximately 76.8% of total enrolment, while the national Gross Enrolment Ratio for the 18–23 age group reached 30.0 in 2023–24. These figures demonstrate the scale at which the relationship between university education, capabilities and employment has become a public-policy issue rather than simply an individual career concern (Ministry of Education, 2026).

The problem cannot, however, be reduced to the number of graduates entering employment immediately after university. Employability and employment are related but conceptually distinct. Employability concerns the knowledge, skills, attributes, experiences and resources that enable graduates to obtain, sustain and develop appropriate work, whereas actual employment also depends upon the number and distribution of jobs, economic conditions, recruitment institutions, location, social networks, gender relations and individual occupational preferences (Yorke, 2006; Tomlinson, 2017). This distinction is particularly important in India. The Periodic Labour Force Survey for January–December 2025 records an unemployment rate of 11.2% among graduates aged 15 years and above under the usual-status measure, compared with 10.0% among postgraduates and above and 3.1% for persons across all educational levels. These figures indicate a difficult graduate labour-market transition, but they cannot by themselves establish that universities produce graduates without appropriate skills or that skill deficiencies cause unemployment (Ministry of Statistics and Programme Implementation [MoSPI], 2026).

Geography deserves particular attention within this debate. It is simultaneously a natural-science, social-science, spatial and applied discipline. A geography graduate may encounter geomorphology, climatology and environmental processes alongside population, economic and urban geography; may collect primary information through fieldwork; analyse quantitative and qualitative evidence; construct and interpret maps; and increasingly use GIS, remote sensing, Global Navigation Satellite Systems (GNSS), spatial databases and digital visualisation. These characteristics create potential pathways into geospatial services, planning, environmental management, disaster-risk reduction, development administration, research, education, logistics, location analysis and related sectors. Indeed, as early as 2001, the University Grants Commission's Curriculum Development Committee in Geography recognised growing demand for GIS, remote sensing and improved field techniques.

Yet disciplinary potential should not be confused with consistently achieved graduate capability. The National Geospatial Policy 2022 provides unusually direct evidence of this problem. It notes that geospatial education was being provided in approximately 200 universities and institutions at different levels, while simultaneously identifying a lack of standardisation in the geospatial curriculum and inadequate integration of geospatial education into the innovation system. The policy therefore links capacity development, education, certification and industry participation to the future development of India's geospatial ecosystem (Department of Science and Technology [DST], 2022).

The research gap lies at this intersection. International literature has examined graduate employability, GIS pedagogy and the skills associated with geography degrees, while Indian policy increasingly emphasises learning outcomes, internships, vocational exposure and geospatial capacity. Indian scholarship has also recognised geography as inherently skill oriented. Nevertheless, there is limited nationwide empirical research specifically connecting undergraduate geography curricula in India with graduate employability outcomes. A further obstacle is statistical: the published AISHE 2023–24 table on undergraduate major disciplines

provides broad disciplinary categories, but does not present geography as a separate national undergraduate row. Consequently, a reliable national geography-specific enrolment or employment rate cannot be derived from that table.

Against this background, the present study has four objectives: first, to examine the higher-education, labour-market and policy context within which undergraduate geography employability must be understood; second, to identify the discipline-specific and transferable competencies through which geography can contribute to employability; third, to assess the alignment and gaps between contemporary policy expectations and geography skill formation; and fourth, to develop an evidence-based framework for strengthening employability while preserving the intellectual breadth of geographical education.

Correspondingly, the paper asks: (1) What national educational and labour-market conditions frame the employability of undergraduate geography students in India? (2) Which geographical competencies have the strongest relevance to contemporary graduate employability? (3) Where are the principal gaps between policy aspirations, curriculum and demonstrable graduate capability? (4) What curriculum, pedagogical and institutional reforms can strengthen employability in an academically defensible and equitable manner?

The central argument developed below is that the principal challenge is not to transform geography into a narrow vocational course. Rather, it is to ensure that its existing intellectual strengths—spatial thinking, human–environment analysis, field inquiry and synthesis across scales—are combined with demonstrable technical competence, authentic application, communication and opportunities to build professional experience.

2. Literature Review

Employability has progressively moved from a narrow conception of possession of occupational skills towards a multidimensional understanding of graduate development. Yorke (2006) conceptualised employability in terms of achievements, understandings, skills and personal attributes that enhance graduates' prospects of obtaining and succeeding in employment. Dacre Pool and Sewell's (2007) CareerEDGE model similarly connected career development learning, work and life experience, degree knowledge, generic skills and emotional intelligence with reflection and self-efficacy. A systematic review by Williams et al. (2016) demonstrated considerable diversity in the employability literature, reinforcing the difficulty of treating employability as a single measurable attribute.

A more critical perspective questions approaches that transfer responsibility for labour-market outcomes entirely to the individual graduate. Tomlinson (2007, 2017) shows that graduates actively construct their orientation towards careers and mobilise different resources during transition into employment. His graduate-capital approach identifies human, social, cultural, identity and psychological resources, making employability relational rather than merely a checklist of technical abilities. The implication for geography education is significant. Knowledge of GIS software, for example, may contribute to human capital, but the value of that knowledge can be weakened where students lack project experience, professional networks, confidence, occupational awareness or credible evidence through which employers can recognise their capability.

Geography-specific scholarship supports this multidimensional interpretation. Brown (2004) found that employment in GIS and geographic-information fields required not only GIS and spatial-data capabilities but transferable qualities such as teamwork and communication. Arrowsmith et al. (2011), examining student employability and geography curricula across different national settings, situated employability within broader decisions about curriculum and learning practices rather than treating it as an optional addition to disciplinary study. Such research suggests that geographical employability should emerge from the organisation of the curriculum itself.

GIS has received particular attention because it provides an explicit interface between geographical knowledge and applied technical work. Şeremet and Chalkley's (2015) research across six undergraduate geography programmes found considerable potential in GIS education but also scope for strengthening its profile and pedagogy. Whyatt, Davies and Clark (2023) subsequently showed the educational value of an independent GIS project in requiring students to cope with less structured problems and develop greater independence. The importance of these studies lies not simply in identifying GIS as an employable skill but in showing that the *manner in which GIS is learned* influences whether students develop problem-solving ability rather than procedural software familiarity alone.

Indian educational discourse has long acknowledged the technical and field-based character of geography. The UGC's 2001 geography curriculum report emphasised GIS, satellite-image interpretation, remote sensing, computer-assisted analysis and the upgrading of fieldwork techniques. More recently, Basantia and Gantait (2023), writing in the *Journal of Indian Education*, characterised geography learning as capable of developing exploration, problem-solving and decision-making skills, although their principal focus was school rather than university education. The continuity between these sources is instructive: recognition of geography's skill potential is not new, but sustained and equitable implementation remains the more difficult issue.

General higher-education policy has also moved toward learning outcomes. The UGC's Learning Outcomes-Based Curriculum Framework stresses disciplinary knowledge together with generic competencies, scientific reasoning, digital literacy and the ability to analyse quantitative and qualitative evidence. It also supports participatory pedagogy, practicum, field-based learning and open-ended project work. These principles closely match geography's pedagogical possibilities (University Grants Commission [UGC], 2020).

Three limitations nevertheless remain in the existing literature. First, much of the empirical work directly connecting geography and employability originates outside India and therefore cannot simply be transferred to India's heterogeneous university and college system. Second, Indian policy documents are principally normative: they establish what institutions *should* do, rather than demonstrating the employment effect of particular curriculum interventions. Third, national datasets do not currently permit a robust geography-specific undergraduate employment analysis. The present study therefore bridges employability theory, geography pedagogy and Indian policy evidence, while explicitly avoiding unsupported claims about geography graduates' actual employment rates.

3. Research Methodology

The study adopts a qualitative, descriptive and analytical secondary-data-based research design. No questionnaire, interview, employer survey, graduate tracer survey or other primary field investigation was undertaken. Accordingly, no respondent numbers, sampling results or primary statistical relationships are reported.

The empirical and policy evidence was selected from authoritative sources available up to 8 September 2026. Higher-education indicators are drawn principally from the Ministry of Education's *All India Survey on Higher Education 2023–24*, released on 8 July 2026. Labour-market evidence comes from MoSPI's *Periodic Labour Force Survey Annual Report 2025*, covering January–December 2025. Policy documents include the *National Education Policy 2020*; the UGC's Learning Outcomes-Based Curriculum Framework, Curriculum and Credit Framework for Undergraduate Programmes (CCFUP), National Higher Education Qualifications Framework (NHEQF), undergraduate internship guidelines and apprenticeship-related guidance; the *National Geospatial Policy 2022*; and relevant DST and Ministry of Skill Development and Entrepreneurship initiatives.

Peer-reviewed research was selected to represent foundational concepts of employability together with studies of geography, GIS pedagogy and experiential skill development. Analysis proceeded thematically across five interrelated dimensions: higher-education scale and graduate labour-market conditions; disciplinary and transferable skills; geospatial and digital capability; experiential and work-integrated learning; and institutional implementation and equity. Quantitative indicators are used descriptively and are not interpreted as causal evidence.

Several methodological limitations must be acknowledged. AISHE does not provide a sufficiently disaggregated published national undergraduate geography series for analysing geography enrolment and outcomes independently. PLFS identifies educational attainment but not an individual's undergraduate discipline in the tables used here, so its unemployment rates cannot be attributed to geography graduates. Moreover, MoSPI has cautioned users about methodological changes introduced in PLFS from January 2025; this paper therefore avoids constructing a causal long-term trend by mechanically comparing 2025 with earlier survey regimes. Finally, implementation of NEP and UGC frameworks varies among universities, states and colleges; policy provisions consequently indicate opportunities and expectations rather than verified uniform practice.

4. Analysis and Discussion

4.1 Higher-Education Expansion and the Data Visibility of Geography

The scale of undergraduate education is the first structural context for employability reform. AISHE 2023–24 recorded nearly 4.5 crore students in higher education, with undergraduates constituting 76.8% of enrolment. The GER reached 30.0 for the 18–23 age group, while female GER reached 31.2. Among undergraduate students for whom major-discipline responses were available, Arts accounted for 32.1%, Science for 13.5%, Engineering and Technology for 12.9%, and Commerce for 12.0% (Ministry of Education, 2026).

Table 1. Selected national indicators relevant to undergraduate employability

Indicator	Latest period used	Value/observation	Interpretive relevance
Total higher-education enrolment	AISHE 2023–24	Nearly 4.5 crore	Employability reform operates at very large scale.
Undergraduate share of enrolment	AISHE 2023–24	76.8%	Undergraduate curriculum is central to the higher-education-to-work transition.
Higher-education GER, age 18–23	AISHE 2023–24	30.0	Participation is expanding, increasing the importance of differentiated graduate capabilities.
Graduate unemployment rate, usual status, age 15+	PLFS 2025	11.2%	Indicates labour-market transition pressure; not a geography-specific rate and not proof of skill deficiency.
Geospatial education coverage identified by policy	National Geospatial Policy 2022	Around 200 universities/institutions at different levels	Demonstrates an established education base but policy also identifies lack of curriculum standardisation.

A significant evidence problem emerges, however, when the analysis moves from general undergraduate education to geography specifically. AISHE's published undergraduate major-discipline table does not provide a separate national geography row from which a reliable national undergraduate geography population can be reported. Geography may also occur within different degree structures, including Arts, Science and multidisciplinary programmes. Any apparently precise national figure for undergraduate geography students derived simply by extracting a broad Arts or Science category would therefore be misleading.

This statistical invisibility has policy consequences. If employability is becoming an explicit objective of undergraduate education, disciplinary reform ideally requires baseline indicators covering enrolment, completion, progression, internships, skill certification and graduate destinations. Geography currently lacks a nationally integrated evidence chain of this kind in publicly reported AISHE tables. Developing discipline-sensitive graduate tracer information would therefore be valuable both for curriculum review and for avoiding policy based primarily on anecdotal impressions.

Institutional diversity further complicates implementation. Of the 46,468 colleges responding to AISHE 2023–24, 70.0% were private unaided, 17.1% government and 12.9% private aided. This does not establish systematic differences in teaching quality, but it does demonstrate that any national employability strategy must function across institutions with very different governance arrangements, locations and resource environments.

4.2 Graduate Unemployment Is Not the Same as a Geography Skill Deficit

The 11.2% unemployment rate for graduates in PLFS 2025 deserves attention because it is considerably above the overall unemployment rate of 3.1% under the same usual-status measure. Yet a supply-side interpretation—graduates are unemployed because they lack skills—would be analytically inadequate. Employment outcomes are produced by interaction between educational capabilities and labour demand, recruitment practices, wages, location, occupational aspirations, job search, gender relations and access to professional networks.

This is precisely where the graduate-capital approach improves upon a narrow skills model. Tomlinson (2017) argues that labour-market transitions depend on several forms of capital. A technically capable geography student who can analyse satellite imagery but has never applied that ability to an authentic project, prepared a professional portfolio, worked with a client, learned how relevant occupations are recruited, or developed professional networks may struggle to translate knowledge into opportunity. Conversely, strong networks without substantive geographical competence are not a durable substitute for disciplinary capability.

Employability education should therefore avoid promising that adding a GIS course will automatically produce employment. It should instead increase the probability that graduates can identify opportunities, demonstrate relevant competence, adapt to changing work and continue learning. Actual employment remains contingent on demand-side conditions. This distinction also prevents universities from being assigned sole responsibility for macroeconomic unemployment.

4.3 The Employability Architecture of Undergraduate Geography

Geography's strongest contribution to employability lies in the interaction of several skill families rather than a single technical specialisation. The first is geographical and spatial reasoning: understanding location, scale, spatial differentiation, connectivity, human–environment relations and regional context. These forms of reasoning allow graduates to ask why a phenomenon occurs in one place rather than another and how processes operating at different scales interact.

The second is geospatial technical capability. Contemporary undergraduate geography can develop competence in cartography, GIS, remote sensing, GNSS, spatial databases, spatial statistics, digital mapping and interpretation of Earth-observation data. The significance of these competencies has strengthened as geospatial information has become embedded in land administration, infrastructure, environmental monitoring, transport, agriculture, disaster management and urban planning. The National Geospatial Policy accordingly treats education and skill development as a core component of ecosystem development rather than a specialist educational concern (DST, 2022).

The third family consists of field, research and data skills. Geography can train students to formulate questions, design field investigations, collect observations, work with census and administrative datasets, evaluate data quality, integrate quantitative and qualitative evidence, interpret landscapes and communicate uncertainty. Importantly, fieldwork should be understood as inquiry rather than excursion. A student who independently defines a problem, designs a sampling strategy, gathers data, analyses spatial patterns and defends an interpretation is demonstrating a substantially richer capability than a student assessed only through reproduction of factual material.

Fourth are applied interdisciplinary competencies. Climate adaptation, urban growth, water resources, public health, disaster risk, agricultural change, environmental impact, migration and regional inequality rarely conform to disciplinary boundaries. Geography's ability to integrate environmental and social evidence can therefore be valuable where the curriculum requires students to solve real problems rather than merely learn topic descriptions.

Finally, transferable and career-development competencies—written and oral communication, teamwork, project planning, ethical judgment, digital literacy and professional presentation—determine whether disciplinary knowledge can travel across occupational contexts. Geography-employability research has repeatedly highlighted this interaction between subject-specific and transferable capability (Brown, 2004; Arrowsmith et al., 2011).

Table 2. A proposed skill architecture for undergraduate geography

Capability domain	Illustrative undergraduate learning	Appropriate evidence of achievement
Spatial and geographical reasoning	Scale, location, region, spatial interaction, human–environment analysis	Analytical essays, spatial problem briefs, comparative regional analysis
Geospatial technology	GIS, remote sensing, cartography, GNSS, spatial statistics	Digital maps, spatial-analysis project, reproducible workflow, portfolio
Field and research capability	Observation, sampling, surveys, data collection, research ethics	Field report, dataset, methods note, research project
Applied problem solving	Urban, rural, environmental, disaster and development problems	Case-based project, planning exercise, policy brief
Communication and collaboration	Report writing, visual communication, presentations, teamwork	Presentation, team project, professional report
Career and professional capital	Internship, client interaction, occupational awareness, networking	Internship assessment, reflective report, CV and professional portfolio

The table deliberately separates *learning content* from *evidence of achievement*. A syllabus can list GIS without demonstrating that graduates can independently use GIS. Likewise, a fieldwork

course does not guarantee research capability unless assessment requires students to make defensible methodological and analytical decisions. Employability therefore depends as much on assessment design as on course titles.

4.4 Policy Convergence: NEP, UGC Reform and the Geospatial Economy

India now has an unusually favourable policy environment for connecting geography with experiential and professional learning. NEP 2020 promotes multidisciplinary undergraduate education and the integration of vocational learning, internships and flexible curricular pathways. The UGC's Curriculum and Credit Framework for Undergraduate Programmes, issued in December 2022, translated this orientation into a flexible, multidisciplinary undergraduate structure, while the NHEQF introduced nationally articulated learning outcomes (Ministry of Education, 2020; UGC, 2022, 2023).

The 2024 UGC *Guidelines for Internship/Research Internship for Undergraduate Students* are particularly relevant. They provide for a minimum of 2–4 internship credits within the required undergraduate credit structure and specify a mandatory internship of 60–120 hours after the fourth semester. The guidelines also encourage HEIs to work with local administration, businesses, research organisations and other external actors and allow clustering among institutions for internship opportunities (UGC, 2024).

These provisions fit geography exceptionally well because suitable work-integrated learning need not be restricted to large private corporations. Geography departments can develop supervised projects with municipal bodies, district administrations, development agencies, environmental organisations, planning institutions, research centres, local enterprises and community organisations. Tasks might involve mapping public facilities, analysing land-use change, documenting flood exposure, creating village-resource inventories or evaluating accessibility to services. The academic requirement is that such work have explicit learning outcomes, competent supervision, ethical safeguards and structured assessment.

This opportunity has expanded alongside national geospatial policy. The 2022 policy explicitly identifies standardisation, skill development and stronger industry linkages as priorities. The National Geospatial Mission announced in the Union Budget 2025–26 further connects geospatial infrastructure to modernisation of land records, urban planning and infrastructure design. By December 2025, the government described training and capacity building as a formal component of the Mission.

The policy direction continued in 2026. In July 2026, the Ministry of Skill Development and Entrepreneurship reported that Skill India initiatives were supporting skill development in emerging space and geospatial fields through areas including GIS, spatial-data management and drone technology, using both short-term training and apprenticeship pathways. This does not prove employment demand for every geography graduate, but it confirms that geospatial competencies have entered the contemporary national skilling architecture (Ministry of Skill Development and Entrepreneurship, 2026).

The implication is that undergraduate geography departments should not operate as isolated academic units. The current policy architecture permits articulation among disciplinary credits, internships, apprenticeships, research projects, skills frameworks and external organisations. The unresolved issue is implementation.

4.5 From Software Instruction to Experiential Geographical Learning

One of the greatest risks in employability-oriented geography reform is equating digital skill development with software demonstration. A GIS practical in which every student follows identical commands may teach basic operation but provide weak evidence of independent problem solving. Şeremet and Chalkley (2015) showed that GIS pedagogy itself requires careful attention, while Whyatt et al. (2023) demonstrated the educational importance—and difficulty—of independent GIS project work.

A stronger curriculum would therefore introduce technical competence progressively. Early undergraduate study can establish cartographic principles, coordinate systems, data types, elementary statistics and spatial thinking. Intermediate work can integrate GIS and remote-sensing analysis with substantive courses such as urban, agricultural, population or environmental geography. Advanced study can require independent problem formulation, spatial-data acquisition, analytical choice, interpretation, validation and professional communication.

The same principle applies to fieldwork. Students should move from guided observation toward independent or team-based inquiry. Where costs constrain long-distance field excursions, meaningful local projects can be academically stronger than expensive descriptive tours. Neighbourhood land-use mapping, mobility analysis, groundwater-risk assessment, heat-exposure mapping or accessibility studies can integrate theory, field observations, secondary datasets and spatial techniques.

Assessment should likewise generate visible evidence of capability. A graduate portfolio might contain a carefully designed thematic map, a remote-sensing analysis, a documented GIS workflow, a field research report, a statistical or qualitative analysis, a short policy brief and an internship output. Such a portfolio helps translate academic learning into signals comprehensible to employers while simultaneously improving reflective learning.

Technology choices also matter for equity and sustainability. Expensive proprietary infrastructure should not become a precondition for employability. Open-source GIS, freely available Earth-observation data, open government datasets and reproducible tools can allow institutions with modest budgets to develop substantial capability. DST's geospatial capacity-building programme itself has increasingly used open-source resources and dedicated learning platforms, illustrating the feasibility of wider-access training.

4.6 Institutional Constraints, Standardisation and Equity

The central weakness revealed by the evidence is not absence of policy recognition. It is the gap between policy ambition and institutional capability. The National Geospatial Policy's explicit observation that geospatial curricula lack standardisation is especially important because concern about technical modernisation is longstanding. The UGC's 2001 Curriculum Development Committee had already identified demand for GIS, remote sensing and improved field techniques. More than two decades later, the persistence of national concern about standardisation suggests that adding technical subjects to syllabi is insufficient unless faculty expertise, infrastructure, assessment and progression are addressed together.

There is also an institutional-documentation issue. The Geography document currently linked from the UGC's Model Curriculum page is the 2001 Curriculum Development Committee report, even though higher education has subsequently acquired general frameworks such as CCFUP, NHEQF and the internship guidelines. This does not mean Indian universities lack newer geography syllabi—many universities have developed NEP-aligned curricula—but it reinforces the case for a contemporary national reference framework for geography learning outcomes and skill progression rather than a rigid common syllabus.

Implementation capacity is likely to vary according to faculty preparation, laboratories, computing access, fieldwork funding, internet connectivity and proximity to organisations able to provide worthwhile internships. The solution is not necessarily identical infrastructure in every college. Regional resource centres, inter-college laboratory sharing, faculty-development networks, shared geospatial repositories, open-source platforms and collaborative internship arrangements could reduce duplication and expand access. The UGC internship framework itself recognises cluster arrangements among institutions as a legitimate strategy.

Equity must also be considered in career-capital development. Internships and professional networking can strengthen employability, but poorly designed systems may advantage students already located near metropolitan employers or able to undertake unpaid work. Meaningful local-government, community, research and remotely supervised projects should therefore receive academic recognition comparable to conventional corporate internships when they generate equivalent competencies. Employability reform should broaden opportunity rather than create a new layer of credential inequality.

4.7 An Employability-Oriented Framework for Undergraduate Geography

On the basis of the preceding analysis, an effective Indian model can be organised as a progressive capability pathway rather than a collection of disconnected skill-enhancement courses.

In the first stage, students require strong disciplinary foundations in physical and human geography together with spatial thinking, cartography, elementary quantitative reasoning and digital literacy. In the second stage, these foundations should be converted into practical ability through GIS, remote sensing, field methods, data analysis and interdisciplinary applications. In the third stage, students should demonstrate integration through independent projects, internships, research or client-oriented assignments. Throughout the programme, communication, teamwork, research ethics, critical reasoning and career awareness should be embedded rather than confined to a final employability workshop.

Four institutional mechanisms are particularly important. First, every programme should map graduate attributes to observable learning outcomes and assessment tasks. Second, at least one substantial authentic geographical problem should be undertaken during each year of study. Third, internships should be selected according to learning quality rather than simply completion certificates. Fourth, final-year students should leave with an assessed portfolio demonstrating what they can actually do.

Departments should also establish periodic curriculum advisory interaction with geospatial professionals, government agencies, environmental and development organisations, alumni and researchers. Such engagement should inform rather than control the curriculum. Geography must

retain critical perspectives on society, environment, inequality and space; employability would be weakened rather than strengthened if the degree became merely short-term software training. Technologies change rapidly, whereas spatial reasoning, methodological judgment, critical analysis and learning capacity remain adaptable forms of graduate capital.

At the system level, a stronger evidence infrastructure is needed. AISHE or complementary higher-education datasets could progressively improve reporting for disciplines such as geography, while institutions should develop graduate tracer mechanisms capable of distinguishing employment, further education, competitive examinations, entrepreneurship and other destinations. Research should then examine not simply whether graduates are employed but whether particular forms of fieldwork, GIS proficiency, internship quality or portfolio assessment are associated with stronger transitions after controlling for relevant background and labour-market factors.

5. Conclusion

This study examined employability and skill development in undergraduate geography education in India through the combined lens of higher-education statistics, labour-market evidence, national policy and scholarly research. Four conclusions emerge.

First, employability has become structurally important because India now educates undergraduate students on a very large scale. At the same time, the relatively high unemployment rate recorded for graduates in PLFS 2025 shows that possession of a degree does not automatically ensure labour-market absorption. That statistic should not, however, be misrepresented as evidence that geography graduates specifically lack skills. The available PLFS data do not permit such a conclusion.

Second, geography possesses a particularly strong potential skill base. Spatial reasoning, field inquiry, quantitative and qualitative analysis, GIS, remote sensing, cartography, environmental interpretation and interdisciplinary problem solving can form a coherent graduate capability profile. International geography-education literature supports the employability relevance of combining technical competencies with communication, teamwork and independent problem solving. The issue is therefore less whether geography *contains* employable skills than whether programmes systematically develop, assess and make those capabilities visible.

Third, India's current policy environment provides substantial opportunities for reform. NEP 2020, CCFUP, NHEQF, UGC internship provisions, the National Geospatial Policy and recent geospatial-skilling initiatives collectively support multidisciplinary, outcomes-based and work-integrated learning. Geography is well positioned to use these reforms because its field and geospatial methods can be applied directly to problems in urban planning, environmental management, infrastructure, disaster risk, rural development and public administration. Yet policy statements cannot substitute for implementation.

Fourth, the most important constraints are uneven curricular and institutional capacity, insufficient standardisation of geospatial learning, variable quality of practical experience, weak connections between academic outputs and occupational signalling, and inadequate discipline-specific graduate data. A credible reform strategy should therefore combine curriculum redesign with faculty development, accessible digital infrastructure, meaningful internships, authentic projects, portfolio-based evidence and improved graduate-tracking systems.

The broader academic implication is that employability should not be treated as an external addition to geography education. Properly understood, it can arise from rigorous geographical education itself when students learn to apply concepts, methods and evidence independently. Nor should employability become synonymous with GIS alone. India's undergraduate geography curriculum must continue to cultivate critical understanding of society, environment and spatial processes while ensuring that graduates can use geographical knowledge competently in changing professional contexts.

The principal limitation of this study is its reliance on secondary evidence and the absence of national geography-specific graduate destination data. Future research should therefore undertake multi-state curriculum audits, longitudinal graduate tracer studies, analyses of geospatial job advertisements, employer studies and evaluations of internship and project-based learning. Such work would enable future claims about geography graduate outcomes to rest on direct evidence rather than assumption. Until such evidence becomes available, the strongest policy conclusion is clear: improving employability in undergraduate geography requires not a narrower discipline, but a better-integrated one in which disciplinary knowledge, geospatial capability, field inquiry, experience and professional communication reinforce each other.

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