INSTITUTIONAL REPOSITORIES AND RESEARCH VISIBILITY: LIS EDUCATION, RESEARCH, AND NEP 2020

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Abstract :

The National Education Policy (NEP) 2020 has triggered a structural shift across Indian higher education, emphasizing multidisciplinary research, digital-first learning, open science, and global academic competitiveness. At the nexus of this transformation is Library and Information Science (LIS) education, which provides the technological and methodological scaffolding for managing digital scholarship. Institutional Repositories (IRs) serve as critical infrastructure within this paradigm, functioning as open-access platforms that archive, preserve, and disseminate an institution's intellectual output to amplify research visibility and impact.

This research paper examines the operational synergy between Institutional Repositories, research visibility, and LIS education reform under the framework of NEP 2020. Utilizing a descriptive-analytical research methodology alongside literature mapping, this study evaluates the current state of IR implementation across Indian higher education institutions (HEIs), identifies systemic gaps in existing LIS curricula, and presents a strategic roadmap for curriculum integration.

Keywords : Institutional Repositories, Research Visibility, Library and Information Science (LIS) Education, National Education Policy (NEP) 2020, Open Access, Digital Preservation, Metadata Standards, Research Data Management (RDM).

Introduction :

The higher education ecosystem is experiencing a profound digital re-engineering, driven by open access mandates, scholarly communication shifts, and national policy directives. In India, the approval of the National Education Policy (NEP) 2020 marked a departure from rigid, compartmentalized learning models to an integrative, technology-driven, and research-focused framework. NEP 2020 places primary emphasis on creating a "vibrant knowledge society" by building robust digital infrastructure, accelerating multidisciplinary research, and democratizing access to educational and scholarly resources.

In this transformed landscape, **Institutional Repositories (IRs)** have emerged as core assets for Higher Education Institutions (HEIs). An IR is a digital database designed to collect, preserve, and showcase the intellectual production of an academic community—including

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peer-reviewed journal articles, conference papers, theses, dissertations, research datasets, and open educational resources (OERs). By adopting Green Open Access strategies and adhering to international interoperability protocols like the Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH), IRs break down paywall barriers, directly improving an institution's research visibility, citation metrics, and global ranking profile.

However, the operational efficiency and strategic integration of IRs depend on the competencies of information professionals. This reality brings **Library and Information Science (LIS) Education** to the forefront. Traditionally focused on cataloging, classification, and physical collection management, LIS programs must modernize to train professionals who can manage complex digital repositories, implement semantic web technologies, enforce copyright standards, and support data-intensive research workflows.

Objectives of the study :

1. Examine the structural relationship between Institutional Repositories and research visibility within higher education.
2. Analyze the policy imperatives of NEP 2020 concerning digital knowledge infrastructure, open science, and LIS education.
3. Formulate an integrative framework to align LIS education with NEP 2020 mandates for enhanced institutional research visibility.

Literature review & conceptual framework :

1. Institutional Repositories and Research Visibility :

Research visibility directly influences an institution's academic prestige, collaborative opportunities, and funding potential. Open Access (OA) literature consistently confirms that publications deposited in institutional or subject repositories experience a significant "Open Access Citation Advantage." IRs improve discoverability by exposing structured metadata to global academic search engines (such as Google Scholar) and national aggregators (such as the National Digital Library of India - NDLI, and Shodhganga).

Dimensions of IR Impact	Mechanism / Protocol	Outcome for Research Visibility
Discoverability	OAI-PMH, Dublin Core, Schema.org	High ranking in global academic search engines and aggregators
Persistence	Handles, DOIs, ARK identifiers	Permanent citation linkage and reduced link rot
Interoperability	REST APIs, SWORD protocol, Linked Open Data	Seamless data exchange with global indexing networks
Impact Measurement	Usage analytics, Altmetrics, ORCID integration	Real-time monitoring of downloads, citations, and social engagement

2. NEP 2020 as a Catalyst for Digital Knowledge Architecture :

NEP 2020 shifts academic focus from passive consumption to active research and

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innovation. Key policy directives that directly impact LIS and IRs include:

- **Multidisciplinary Research Ecosystems :** Encouraging cross-domain research, which requires centralized, searchable repositories to bridge disciplinary silos.
- **National Educational Technology Forum (NETF) :** Driving the adoption of modern digital tools and infrastructure for knowledge creation and dissemination.
- **Open Educational Resources (OER) & Digital Libraries :** Mandating equitable access to high-quality learning resources to bridge the digital and social divide.
- **Continuous Skill Upgradation :** Requiring professionals to acquire 21st-century digital skills, including data stewardship, metadata mapping, and digital preservation.

3. The Evolution of LIS Pedagogy :

LIS education in India has evolved through distinct technological phases: from manual librarianship to automated library management systems, and now to the

Methodology :

This study utilizes a **descriptive-analytical methodology** combined with policy content analysis. The primary data and context were evaluated through three primary streams:

1. **Policy Document Analysis :** Systematic content evaluation of the *National Education Policy 2020* draft and implementation guidelines published by the Ministry of Education, Government of India, focusing on digital infrastructure, higher education research, and library modernization.
2. **Repository Infrastructure Evaluation :** Assessment of technological maturity across open-source IR platforms (specifically DSpace, EPrints, and Invenio) deployed across Indian central and state universities.
3. **LIS Curriculum Mapping :** Comparative analysis of traditional LIS syllabi (BLISc and MLISc) against modern competency requirements in digital curation, research metrics, and repository management.

Analysis And Findings :

1. Status of Institutional Repositories and Research Visibility in Indian HEIs :

While premier Indian institutes (such as IISc, IITs, IIMs, and major Central Universities) maintain mature institutional repositories with standardized Dublin Core metadata, Handle systems, and OAI-PMH harvesting, state universities and affiliated colleges face technical maturity challenges:

- **Fragmented Metadata Practices :** Lack of uniform controlled vocabularies and authority control, leading to sub-optimal indexation in search engines.
- **Underutilization of Web 2.0 and Semantic Web Tools :** Limited adoption of Linked Open Data (LOD) standards, automated researcher identification (ORCID/ResearcherID), and interactive social features within IR platforms.
- **Green Open Access Barriers :** Absence of mandatory institutional open-access policies, resulting in low self-archiving rates by faculty members.

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2. Gaps in Current LIS Education under NEP 2020 Mandates :

To build and maintain robust IRs that increase research visibility, LIS graduates must possess technical expertise. However, analysis of current LIS curricula reveals notable operational gaps :

1. **Deficit in Practical Technical Skills :** LIS courses often cover IR concepts theoretically without providing hands-on training in server installation, DSpace administration, XML customization, or API integration.
2. **Absence of Research Data Management (RDM) :** Modern IRs must archive non-textual research artifacts, raw datasets, and code. Standard LIS education rarely includes training in data repositories (e.g., Dataverse, CKAN), FAIR data principles (Findable, Accessible, Interoperable, Reusable), or data management plans (DMPs).
3. **Inadequate Understanding of Bibliometrics and Altmetrics :** LIS graduates often lack depth in research analytics, citation databases (Scopus, Web of Science), author disambiguation, and altmetric tracking required to evaluate research visibility.
4. **Legal and Ethical Complexity :** As copyright and licensing models grow more intricate, training in Creative Commons licensing, publisher self-archiving policies (Sherpa/RoMEO), and fair-use frameworks remains minimal.

Strategic Recommendations :

To optimize Institutional Repositories as engines for research visibility under NEP 2020, stakeholders must execute targeted interventions:

1. **Establish National IR Interoperability Standards :** Government bodies (INFLIBNET, UGC, DST) should update metadata standards and API mandates across all university IRs to ensure seamless integration into national platforms like the National Digital Library of India (NDLI).
2. **Mandate Institutional Open Access Policies :** HEIs should adopt institutional self-archiving policies requiring faculty and researchers to deposit all peer-reviewed research outputs into the IR upon publication.
3. **Transition to Experiential LIS Pedagogy :** LIS departments must move from theoretical lecturing to hands-on studio models, embedding apprenticeships within university libraries and digital repository labs as supported by NEP 2020's flexible credit framework.
4. **Capacity Building for In-Service Librarians :** Establish continuous professional development (CPD) micro-credentials in digital preservation, metadata engineering, and AI-assisted cataloging to upskill existing library staff.
5. **Leverage Emerging AI & Semantic Web Technologies :** Integrate AI tools for automated metadata extraction, subject indexing, and language translation into IR workflows to make research accessible across multiple Indian languages.

Conclusion :

Institutional Repositories are central to transforming raw intellectual output into visible, accessible, and high-impact academic capital. In the era of NEP 2020, IRs serve as digital

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bridges connecting local institutional research with the global scholarly community. Achieving this potential requires a parallel evolution in Library and Information Science education. By modernizing LIS curricula to emphasize digital preservation, technical repository administration, research data management, and research metrics, higher education institutions can train a new generation of information professionals capable of driving open science, enhancing research visibility, and realizing NEP 2020's vision of a globally competitive knowledge society.

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