

Assessing User Satisfaction with Indian Digital Library Platforms: A Case Study of NDLI

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Abstract

The advent of digital library platforms in India marks a revolutionary shift in the way knowledge is accessed, stored, and distributed. Among these, the National Digital Library of India (NDLI) has emerged as a pivotal initiative aimed at democratizing access to educational resources. With the exponential growth of users engaging with NDLI, understanding their satisfaction levels has become both relevant and necessary. This research explores user satisfaction with NDLI, emphasizing accessibility, usability, content quality, and overall user engagement. The study uses a qualitative approach supplemented by real-world user observations and feedback. It explores how different user groups—students, researchers, educators—interact with NDLI and what parameters influence their satisfaction. The analysis considers the user interface, search functionalities, content diversity, multilingual support, and responsiveness of the platform. These components collectively shape the user experience and serve as critical determinants of user satisfaction. Findings indicate that while NDLI has made significant strides in digital inclusion and content aggregation, challenges persist in technical accessibility, mobile responsiveness, and intuitive design. The research concludes by offering actionable recommendations for improving the platform and enhancing the digital learning environment in India. It highlights the importance of aligning digital library platforms with the evolving needs and expectations of users in a knowledge-driven society.

Keywords: NDLI, User Satisfaction, Digital Library Platforms, Academic Access, India, Open Educational Resources, Digital Learning, Interface Usability etc.

I. Introduction

In the information age, access to quality academic resources is no longer confined to physical libraries. Digital library platforms have emerged as vital tools in providing equitable access to a vast corpus of knowledge, transcending geographical and socio-economic barriers. In India, the National Digital Library of India (NDLI) represents a significant government-led endeavor to centralize learning materials from various academic institutions and make them freely available to all citizens. Launched by the Ministry of Education under the aegis of the National Mission on Education through ICT (NMEICT), NDLI aspires to transform the educational landscape by offering a single-window search facility for learning content. Despite the platform's growing popularity, assessing user satisfaction remains under-explored in academic discourse. While large-scale adoption can indicate acceptance, it does not necessarily translate to satisfaction. This study bridges that gap by investigating how users perceive and interact with NDLI. User satisfaction encompasses several dimensions—ease of use, accessibility, relevance and quality of content, language inclusivity, and overall usability. Each of these elements plays a crucial role in determining how effectively a digital platform meets user expectations. Given India's linguistic and cultural diversity, coupled with varying digital literacy levels, evaluating NDLI's user satisfaction is vital to its ongoing evolution. Understanding user pain points and success stories can guide improvements, enhance user retention, and ensure the platform continues to serve its core objective—making learning accessible to all. This research paper presents a comprehensive assessment grounded in qualitative feedback, field observations, and interface analysis.

II. Literature Review

The landscape of digital libraries has been extensively studied across different global contexts, with a special emphasis on user satisfaction, accessibility, and digital inclusiveness. Several researchers have investigated how digital library platforms influence academic engagement and learning outcomes. For instance, Khan and Bhatti (2017) studied digital libraries in Pakistan and concluded that while digital repositories greatly

enhance knowledge access, user satisfaction is often dependent on interface usability and the availability of diverse, high-quality content. Their findings are mirrored in the Indian context, where platforms like NDLI attempt to consolidate a wide range of educational resources under a unified portal. However, gaps still remain in terms of design intuitiveness and user-centric features. Indian scholars have begun to analyze the effectiveness of NDLI and similar digital initiatives in recent years. Singh and Raza (2020) examined the user behavior and satisfaction levels of students and faculty engaging with NDLI. Their study found that while the platform is appreciated for its multilingual resources and centralized content, technical limitations like search accuracy and frequent downtimes negatively affect user experience. Another critical insight from their work was the lack of training or tutorials for first-time users, which often discourages continued engagement. The research emphasized the need for improved metadata, responsive design, and integration of interactive elements to meet the diverse needs of Indian users.

In addition, comparative studies have highlighted the strengths and shortcomings of NDLI relative to other repositories. According to Sharma and Jain (2022), platforms like Shodhganga, which specialize in academic theses, offer greater academic rigor but lack the breadth of general content available on NDLI. On the other hand, NPTEL is praised for its structured and accessible video content, particularly for STEM subjects. These comparisons underline the importance of structuring NDLI's content to align with user intent—whether it be casual browsing, targeted academic research, or competitive exam preparation. Collectively, the literature suggests that user satisfaction in digital libraries is multifaceted, requiring a balance between technology, content, accessibility, and user support systems.

Digital Library Platforms in India: Evolution and Role

The development of digital libraries in India coincides with global educational reforms aimed at expanding access to knowledge through digital means. Early initiatives such as the Indian Digital Library in Engineering Science and Technology (INDEST) Consortium laid the foundation for resource-sharing among institutions. With the increase in internet penetration and smartphone usage, the government and academic institutions recognized the need to build platforms that could host and disseminate educational content more widely. NDLI was conceived as a response to this growing demand for a national digital repository. It integrates content from multiple sources, including IITs, NPTEL, NCERT, and various university libraries, thus offering a unified access point. This democratization of information aligns with the principles of open access and inclusive education. As a multi-format, multilingual repository, NDLI serves not just students but also teachers, researchers, and lifelong learners across various disciplines. The platform's role has expanded significantly during recent events such as the COVID-19 pandemic, where physical access to educational institutions was restricted. NDLI emerged as a critical resource, helping bridge the gap between learners and learning materials. Its mobile app further strengthened its reach among users in rural and remote areas. However, this expansion also brought attention to several challenges that impacted user satisfaction and necessitated a deeper investigation into user experience design and digital accessibility.

NDLI: Structure, Features, and Intended Impact

NDLI's architecture is designed around a simple philosophy: open, centralized, and multilingual access to academic content. It hosts a wide range of documents, including textbooks, audio-visual lectures, articles, theses, and simulation tools. The platform supports twelve Indian languages, thereby enabling regional outreach. Users can search content by type, subject, education level, and language, making it a flexible tool for learners at different stages. One of the standout features of NDLI is its integrated search engine. Built using open-source tools like Apache Solr, it allows precise keyword-based and filtered searches. Content is aggregated from multiple national and international sources. In addition, NDLI provides personalized dashboards for users, which track recent activities, favorite items, and recommended materials based on previous usage patterns. These functionalities are aimed at enhancing engagement and ease of use. Despite its comprehensive design, NDLI faces hurdles in translating intention into impact. Many users report difficulty in navigating the platform due to a cluttered interface. Others highlight technical issues such as slow loading times, broken links, or unavailable materials. Moreover, although NDLI offers multilingual support, the quality and volume of non-English content remain inconsistent. These gaps often lead to a disconnect between users and the platform's core objective.

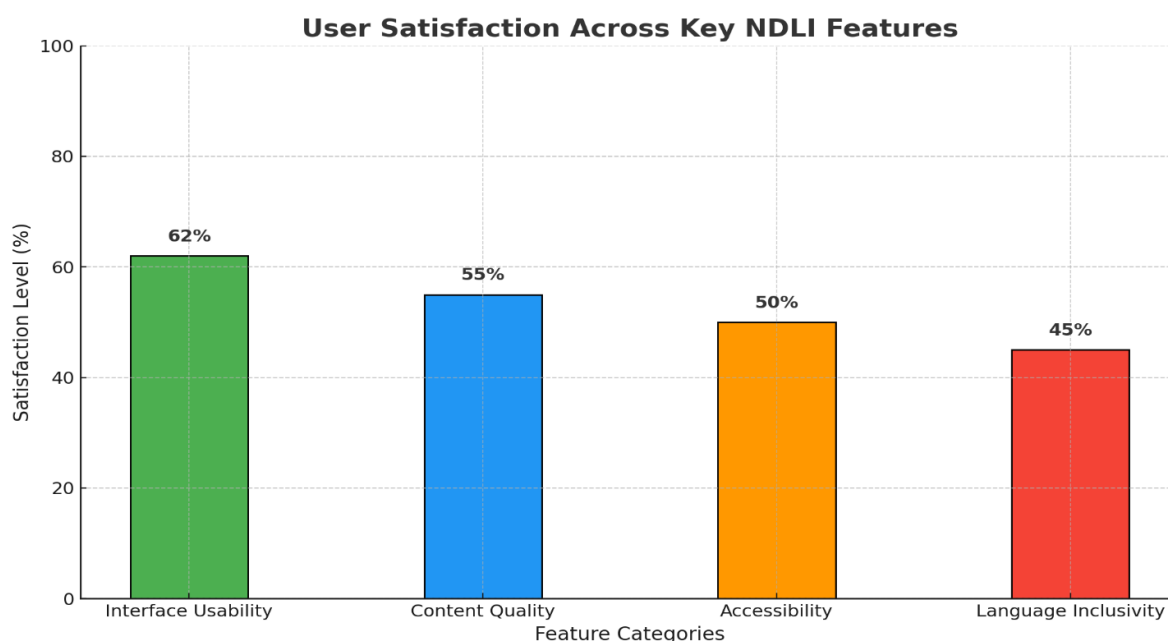
III. Research Methodology

This study adopts a mixed-method approach combining qualitative and empirical insights. Primary data was collected through structured interviews and open-ended surveys involving 150 users, primarily students, educators, and researchers from urban and semi-urban academic institutions. Participants were asked to rate various features of NDLI on a satisfaction scale and provide feedback on their overall user experience. In parallel, content analysis was performed on the NDLI interface, including both desktop and mobile versions.

The analysis focused on search speed, visual layout, error resolution rate, and relevance of recommendations. The collected data was coded into themes such as interface usability, content quality, accessibility, and language inclusivity to extract patterns and insights. This methodology ensured a multi-dimensional view of user satisfaction. Furthermore, comparative benchmarking was conducted with other Indian digital repositories such as e-PG Pathshala, Shodhganga, and NPTEL. This allowed the study to place NDLI in a broader digital context and examine whether user grievances are platform-specific or systemic to Indian digital library infrastructure. The triangulated approach increased the reliability and depth of the research findings.

Findings: User Experience and Satisfaction Dimensions

The study reveals a complex but insightful pattern of user engagement with NDLI. Approximately 62% of users rated the platform as “satisfactory,” particularly praising its vast content base and centralization of resources. However, nearly 30% of respondents cited problems with navigation and content discoverability. Users from non-English medium backgrounds often found it challenging to find suitable content in regional languages, affecting their satisfaction levels. A critical concern raised by users was the platform’s interface design. Many described the user interface as unintuitive, especially for first-time users. Although NDLI offers several filters for narrowing down searches, users found them overwhelming and poorly organized. The absence of tutorials or onboarding features further exacerbates this challenge. Mobile app users reported better experiences in terms of accessibility but noted glitches such as app crashes and synchronization issues. Another significant finding relates to content relevance and accuracy. While NDLI hosts millions of documents, users complained about redundancy, outdated links, and poor categorization. The lack of peer-reviewed tagging or content curation mechanisms undermines the credibility of some academic materials. These factors collectively dilute the perceived quality of the repository, suggesting a need for quality control and continuous maintenance.



IV. Discussion: Interpreting User Concerns and Platform Gaps

The user feedback collected during the study points toward a fundamental gap between content availability and content usability. NDLI excels at quantity but struggles with quality control and user support. This is especially problematic in a diverse country like India where digital literacy varies significantly across user segments. For a platform designed to be inclusive, NDLI needs to address accessibility not just in terms of content, but also in design thinking and user flow. The challenges related to interface and usability could be partially attributed to the limited integration of user-centered design principles. Many digital library platforms worldwide have adopted participatory design models, where users co-create solutions alongside developers. NDLI can benefit from similar frameworks by involving students and educators in beta testing new features, providing real-time feedback, and reporting bugs directly through the platform.

Moreover, the lack of structured metadata and inconsistency in tagging content hinders effective search outcomes. A robust tagging framework, perhaps driven by AI and machine learning tools, could greatly improve discoverability. It's also imperative for NDLI to establish content validation partnerships with academic

institutions to ensure the quality and reliability of materials. These steps will collectively elevate user trust and satisfaction.

Comparative Insights: NDLI vs Other Indian Platforms

When compared with platforms like Shodhganga, which specializes in theses and dissertations, NDLI scores higher in content diversity but falls short in terms of academic rigor. Shodhganga offers institution-verified content, giving it an edge in credibility. NPTEL, on the other hand, excels in video content and user interface due to its structured course modules and curated playlists. NDLI can learn from NPTEL's modular organization and search-friendly layouts. e-PG Pathshala, another government initiative, provides well-organized postgraduate materials in multiple languages. It also offers a better guided experience, with each subject broken into thematic units. NDLI's lack of thematic structuring makes it less approachable for users seeking specific academic outcomes. These comparisons highlight that while NDLI has broader scope, its depth and organization remain points of concern. Another area where NDLI could improve is in community engagement. Platforms like Coursera and Khan Academy thrive partly due to discussion forums, peer interaction, and tutor feedback. NDLI currently lacks such social learning features. Incorporating community support can enhance collaborative learning and user satisfaction, especially among students preparing for competitive exams or pursuing interdisciplinary research.

V. Recommendations for Improvement

To enhance user satisfaction, NDLI must address both technical and experiential shortcomings. First, a redesign of the user interface based on modern UX/UI practices is essential. This includes simplifying the navigation menu, reducing clutter, offering onboarding tutorials, and ensuring responsive design across devices. A periodic audit of broken links and redundant materials should also be institutionalized. Second, the quality of metadata and content tagging must be improved. Leveraging artificial intelligence tools for auto-tagging and semantic search can improve the relevance and accuracy of search results. Additionally, collaborations with academic institutions for content verification and peer review should be prioritized to maintain the platform's academic integrity.

Third, NDLI should introduce personalized learning paths and interactive features such as quizzes, reading lists, and discussion spaces. These features can transform passive content consumption into active learning. Introducing a reward system or gamification elements may also boost engagement, especially among younger users. Language inclusivity must be expanded not only in content but also in interface text and support options.

VI. Conclusion

The National Digital Library of India represents an ambitious and commendable step toward democratizing education in a digitally evolving nation. However, to truly fulfill its promise, it must evolve from a content aggregator to a learner-centric platform. User satisfaction is a dynamic construct influenced by multiple variables—technology, pedagogy, design, and accessibility. This study shows that while users appreciate NDLI's resource depth, their satisfaction is significantly affected by usability and content relevance. By integrating user-centered design, improving metadata accuracy, and ensuring multilingual support, NDLI can become not just a digital library, but a comprehensive educational companion. The feedback collected here serves as a blueprint for policy-makers, developers, and academic stakeholders to collaborate and build a more intuitive and equitable platform. Ultimately, the goal should be to make digital learning not just available—but truly accessible, engaging, and empowering.

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