

DIGITAL EDUCATION: POLICY-LED TRANSFORMATION AND ITS IMPACTS

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Introduction:

In the ever-evolving landscape of education, the paradigm has shifted from traditional classroom setups to the integration of technology, with online and digital platforms emerging as the primary mediums of teaching and learning. This transition has been catalysed by changing policies, challenges, and the dynamic prospects inherent in the globalized world. This paper seeks to delve into the multifaceted issues that confront education in India, particularly in light of globalization, while also examining the transformative potential of contemporary policies such as the National Education Policy (NEP).

As we navigate through this discourse, it becomes evident that technology plays a pivotal role across all levels of education, from primary to tertiary. The imperative to incorporate technological advancements into pedagogy is underscored by the demands of the present era. Thus, understanding the nuances of these challenges and prospects becomes imperative to ensure a robust and inclusive educational framework that meets the needs of a rapidly evolving society.

HISTORY:

The necessity for policy arose during DS Kothari's tenure as chairman of UGC in 1964, coinciding with the inception of human language translation studies in the 1950s. This field faced initial challenges, with language and communication technology only gaining traction post-computer invention. Significant funding was directed towards translation machines, with ongoing contributions from scientists and scholars who integrated technology, language (particularly English), and communication into their research. Tagore's educational principles, encompassing naturalism, humanism, internationalism, and idealism, emphasized the enlightenment of inner consciousness through love rather than power.

Tagore's writings, such as "The Centre of Indian Culture," advocate for unity in diversity, transcending caste and creed. The NEP 2020 incorporates Tagore's vision by integrating various disciplines like music, dance, arts, and robotics into the education system. Globalization and information and communication technology have bridged geographical divides, facilitating knowledge exchange among diverse cultures and languages. In a multilingual country like India, access to information and services in native languages, derived from English, fosters comfort and inclusivity. Today's globalization is technology-centric, revolving around human language technology (HLT), which facilitates knowledge dissemination and communication across linguistic barriers, thereby enhancing the knowledge ecosystem.

Globalization, Information and communication technology have removed geographical barriers between the east and west and across seas, knowledge is being shared between different countries and different spoken languages, so also in a multi-lingual country like India, people need information and services in their own language picked from English

Language in which they feel more comfortable. Today's globalization is centered on technology nucleated around information and communication technology or otherwise called Human Language Technology (HLT). This has enabled masses to acquire knowledge society and ensuring communication without a language barrier and elevating the knowledge chain. Understanding and managing knowledge.

OVERVIEW LITERATURE:

Over the past three decades, various education systems have been in place since the previous national education policies. However, the latest National Education Policy (NEP) implemented on July 29, 2020, marks one of India's most significant revolutionary transformations in its education system, primarily through digitalization. Teaching via technology has become imperative in the developing world due to economic opportunities and the prevalence of digital communication mediums. This shift towards technology integration represents an interdisciplinary approach, merging computer science, linguistics, and cognitive sciences. Utilizing tools such as computer-assisted language learning (CALL), teleconferencing (TELL), multimedia resources, virtual platforms, and the internet, education is becoming more accessible and interactive. The key disparity between previous national policies and the current NEP lies in the emphasis on information technology, artificial intelligence, machine learning, and coding. These additions reflect the evolving landscape of education, aligning with the demands of a digital era and preparing students for the challenges and opportunities of the future.

AIMS AND OBJECTIVES:

English knowledge is regarded as a crucial resource, essential for leveraging technology and advancing the lives of our populace. It holds a significance akin to land, labour, or capital in fostering sustainable development, a recognition that dates back to the early years of our independence. The implementation of the New National Policy amid the 2020-21 pandemic, with its strong focus on digitalization, proved to be an immense boon. With schools closed in over 200 countries, digital methods became the sole avenue through which students could continue their education online.

In this context, the role of English as a medium of instruction and communication becomes even more pivotal. The ability to understand and utilize English effectively opens up a wealth of information and resources that are predominantly available in this language. As the global landscape continues to shift towards a more interconnected and digital world, proficiency in English facilitates not only access to cutting-edge technological advancements but also participation in the global discourse on various critical issues.

Moreover, the pandemic underscored the importance of digital literacy and the role of English in navigating this new educational paradigm. The rapid shift to online learning platforms required students and educators alike to adapt swiftly, often relying on English-language tools and resources. This transition highlighted the disparities in access and proficiency, making it evident that enhancing English education is not just a matter of academic achievement but a crucial step towards equitable and inclusive growth.

Thus, English knowledge emerges as a vital component of our development strategy, intersecting with various facets of national growth, from education and technology to economic and social progress. Its importance, akin to traditional resources like land, labor, or capital, underscores the need for policies and initiatives that prioritize language education as a fundamental pillar of sustainable development.

RESEARCH METHODOLOGY:

The research methodology involves allocating a substantial portion of the GDP, initially set at 3% but now increased to 6%, for scientific research, aligning with the expenditure

percentages of the most scientifically advanced nations. With a budget of no less than INR 15,000 crore, research becomes pivotal in technology knowledge management, ensuring access to various forms of technology knowledge, particularly for those who can leverage it. However, successful implementation and continuity of this new policy necessitate infrastructural modifications and significant government involvement to bear the costs of technical tools. Failure to do so risks diluting the essence and effectiveness of the National Education Policy, especially in the face of challenges like increased fee structures in private institutions, high dropout rates, achieving 100% enrolment, and ensuring sustainability. The shift to online and technology-based education has prompted extreme measures from children and parents, including selling their only assets to purchase smartphones, and tragically, some instances of loss of life. Nonetheless, ICT, AI, and ML inevitably represent a Pandora's box of possibilities. While socio-economic factors may pose obstacles, in the long run, digitalization and the new education policy are intertwined. Presently, the majority of colleges and universities have integrated technology into their teaching curriculum. Additionally, UNESCO has established norms for foreign language education, and the advent of the web has catalysed the explosion of online learning.

THEOROTIC FRAMEWORK:

There is a widespread sentiment of scepticism towards technology-based learning, voiced by statesmen, the general public, stakeholders, teaching faculty, parents, and various others. However, the future of the National Education Policy (NEP) holds promise through its emphasis on continuous comprehensive learning, faculty training, upgrading, and professional development, all coupled with technology integration such as ICT, AI, ML, coding, decoding, and education planning aimed at enhancing learning outcomes. The NEP aims to revolutionize education by incorporating various digital tools and platforms into every institution, whether government, private, or deemed universities, all equipped with advanced internet provisions to make education more effective.

Despite the potential benefits, concerns persist, particularly regarding the growing privatization of higher education. Socially and economically disadvantaged groups (SEDGs) often struggle to adapt to technology, but with time, familiarity tends to grow. Coding, now a compulsory subject for all children, akin to Vedic math or abacus, is considered essential for the younger generation, typically introduced during middle school years between 6th to 8th standard. This approach, although met with resistance initially, is envisioned to gradually yield positive results in improving educational standards and opportunities for all.

DATA USED INSTRUMENTATION:

The National Education Technology Forum (NETF) serves as a platform for the free exchange of ideas regarding the utilization of technology to enrich learning, assessment, planning, and administration in education. Its primary focus lies in fostering research and innovation in the integrated use of technology within educational contexts, backed by authentic data. Concerns regarding intellectual property rights, particularly in recorded lectures, are addressed within the framework, ensuring that innovative contributions are protected while promoting knowledge dissemination.

Furthermore, the forum remains vigilant in monitoring cyber activities and adheres to relevant legal provisions such as the Information Technology Act of 2000, including sections 509 of the Indian Penal Code and 507, among others. The National Education Policy (NEP) has instituted statutory protections to safeguard against potential infringements, providing a regulatory framework to support technological advancements in education.

The integration of digitalization and technology within the educational landscape serves to bridge the nation, ensuring both teachers and students are equipped with a comfortable and efficient educational system. However, the full implementation of a technology-enriched

NEP is a gradual process, marked by careful and steady progress to ensure sustainable integration and optimal outcomes for all stakeholders involved.

RESULT AND DISCUSSION:

Within the framework of the National Education Policy (NEP), the emphasis on moderate, authentic data and digital knowledge management is paramount. NEP cannot exist in isolation as a mere draft or set of guidelines; rather, it must be implemented as a comprehensive strategy encompassing various aspects of education reform.

English, as the language of technology, assumes a crucial role and therefore needs to be incorporated into the curriculum from the early stages of education. Utilizing a bilingual or multilingual approach, particularly at the primary level, facilitates lifelong learning and ensures adaptability in an increasingly globalized world. Additionally, the concept of hybrid cloud infrastructure can play a pivotal role in modern education systems, enabling seamless access to educational resources and fostering collaboration among students and educators across diverse geographical locations.

In summary, NEP's vision for education reform necessitates the integration of moderate, authentic data and digital knowledge management practices, alongside prioritizing English language learning, bilingual education, multilingualism, and the adoption of hybrid cloud infrastructure to ensure comprehensive and effective educational outcomes.

FINDINGS:

Utilizing technology within a whole-class context, along with Information Warfare (IW), can significantly enhance the learning process by providing structured subject knowledge and facilitating language acquisition. The strategic use of colours, particularly within the context of IW, proves to be highly effective. Texts can be highlighted using different colours, aiding in comprehension and retention.

In the realm of knowledge management systems, a holistic approach involves designing systems that incorporate various elements such as books, knowledge entities matrix, points of reference, roles, materials, computers, societal aspects, and nature. Societal knowledge management has undergone evolution over the past 2000 years, adapting to changing needs and technological advancements.

A knowledge model outlines the applications of knowledge management practices and principles across industries, education, organizations, and other sectors. Various approaches to knowledge management, including calls for action, leadership roles for managers, and opportunities for young professionals, contribute to its effective implementation and utilization.

Furthermore, glimpses into knowledge management and knowledge-based societies shed light on the transformative potential of organized knowledge, shaping industries, education systems, and societies at large. This comprehensive approach underscores the importance of integrating technology and information warfare tactics to optimize learning outcomes and foster knowledge-based societies.

LIMITATIONS:

In addressing diverse learning styles, it's crucial to debunk the myth that certain styles are superior to others. Individuals may lean towards visual, auditory, kinaesthetic, or other learning styles, each with its own strengths. For visual learners, clear images and color-coded words can enhance comprehension. Kinaesthetic learners benefit from hands-on activities, such as interactive engagement with Information Warfare (IW) through tasks like dragging, dropping, or highlighting. Auditory learners thrive with sound-based learning tools like songs and short utterances that complement text or visuals.

Moreover, there's a pressing need for multi-lingual content to support accelerated educational growth, posing a significant challenge in providing user-friendly and cost-effective tools and applications. This challenge is particularly pronounced in India, where diverse languages are spoken, including Kannada. Institutions like Bangalore University, with its centre for regional languages, play a vital role in this endeavour by offering web content and translation materials. Bangalore, often referred to as the "Silicon Valley" of India, ranks seventh in utilizing ICT for education. The city's transformation mirrors California's Silicon Valley, fostering urbanity and empowerment through the Internet revolution.

India has earned a respectable position in global technology since the emergence of information technology (IT), which many see as a panacea for India's chronic developmental issues. The internet, as the primary communication medium of IT, has transformed the lives of eco-friendly users across various segments of Indian society, including the upper and middle classes, school students, farmers, and higher education professionals. Several significant initiatives have been undertaken, focusing on cross-lingual information access and retrieval, human-machine interface systems (HMIS), text-to-speech systems (TSS), language processing, and the adaptation of IT tools and solutions in Indian languages. Furthermore, significant efforts have been made towards human resource development in language technology.

In the realm of virtual worlds, the evolution of commands typed on keyboards has led to the development of early adventure games and simulations. These innovations have progressed to multi-user variants, such as Multi-User Domains (MUDs), which eventually evolved into MUDs OO (Multi-User Domains Object-Oriented), providing users with immersive and interactive virtual experiences.

Percentage of Indian households that can afford certain yearly expense on communications and technology

Household income (yearly)	% of households	Affordable expenditure communications (yearly)
3,50,000	1.6	> 24,500
175,000 = N 3,50,000	6.3	12,250=N24,500
70,000=N175,000	23.3	4900=N12,250
3500=N70,000	31.8	3150=N4900

1. The proportion of Indian households capable of spending a specified amount annually on communication and technology.
2. The percentage of families in India who can afford a particular yearly expenditure on technology and communication.
3. The share of Indian households with the financial means to allocate a certain yearly budget to communication and technology expenses.
4. The fraction of households in India that can manage a specific yearly cost for communication and technological needs.
5. The segment of Indian families who are able to cover a defined annual expense on technology and communication services.
6. The rate of Indian households that can afford a set annual spending on communication and technology.

CONCLUSION:

The National Education Policy (NEP) is tasked with addressing legal issues and threats to sustainable technology within the education system. The rapid digitalization during the pandemic accelerated the transformation, compressing what would typically take 5.3 years into a shorter timeframe. Language translation plays a crucial role in intellectual communication technology, exemplified by initiatives like ICT4LT (ICT for Language Teachers) and DOTS (Developing Online Teaching Skills).

The overarching objective of the new education policy is to revolutionize India's education system by 2021. This entails consolidating various bodies such as UGC, AICTE, etc., into a unified policy framework. The envisioned reforms include simplifying the curriculum, reinforcing core values and essentials, fostering critical thinking skills, and reintroducing four-year multidisciplinary bachelor's programs with exit options.

The ultimate aim is to empower students, teachers, and educational institutions, positioning India as a global knowledge superpower. Embracing a multidisciplinary approach and offering multiple exit pathways within the education system ensures adaptability and relevance in an ever-changing world. This comprehensive strategy aims to equip individuals with the skills and knowledge necessary to thrive in a dynamic global landscape.

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