NEW EDUCATION POLICY: QUALITATIVE (CONTENTS) ANALYSIS AND TWITTER MINING (SENTIMENT ANALYSIS)

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ABSTRACT

The year 2020 has been an exceptional year for countries across the globe. In India, apart from Covid-19, one of the important changes that took place was the development of the New Education Policy (NEP) 2020. Time by time, various committees have recommended to increase the allocation of the budget for education to 6% of the GDP, this has lead to the interests of researchers. This paper aims to identify the concerns and focus of policy documents and computer-assisted qualitative data analysis software to address the issues. The research also uses data from Twitter. The data (policy documents) was downloaded from the Ministry of Human Resource Development (MHRD) website. For a better understanding of the collected data, Word Cloud, TreeMap, Project Map, along with the graphical representation of sentiments of stakeholders, is presented in the paper. The paper identifies three crucial aspects of the policy – course, language, and students, for the higher education sector. This paper also discusses the sentiment analysis, related to NEP 2020. It was found that most of people consider the policy as a positive and welcoming step.

Keywords: New Education Policy (NEP), India, Qualitative Analysis, Thematic Analysis, Wordcloud, Treemap, Project Map, Mind Map, Sentiment Analysis, NVivo

INTRODUCTION AND RELEVANT LITERATURE

Countries plan their education systems to progress further (Rizvi & Lingard, 2009). To promote education at all economic classes and for the inclusion of common/ordinary people in the mainstream the Government of India (GOI) has formulated the National Policy on Education (NPE). This policy has broader coverage, starting from elementary school education (literacy level) to colleges for higher education (focusing specialization) – in both the settings, i.e. rural and urban. The first NPE was proposed and disseminated in 1968 by the GOI, the second policy was in 1986, and the third major reformative policy was in 2020, by the incumbent Prime Minister of India Narendra Modi (Govt. of India, 2020).

Historical Evolution of Education Policies of India

After independence in 1947, the GOI faced many challenges like illiteracy. For solving the problems of illiteracy, the GOI floated and sponsored different types of programs, policies, and regulations. The first Education Minister of India, Maulana Abul Kalam Azad, envisaged the uniform education system through robust central government control over the education system and policies.

The Union Government has founded the University Education Commission (1948–1949), the Secondary Education Commission (1952–1953), Kothari Commission (1964–1966), and the University Grants Commission (November 1956); to prepare the proposals to modernize the
This NPE is known for the "child-centered approach" especially for primary education, and, thus, initiated a very popular educational reform "Operation Blackboard." The objective was to develop primary schools across the country. The policy extended the open and distance university system with the Indira Gandhi National Open University (IGNOU) founded in 1985 (IGNOU, 1985). This policy has followed the philosophy of Mahatma Gandhi to promote development (both economic and social) at the bottom level in rural India (Govt. of India, 1986).

In 1992, the former Prime Minister PV Narasimha Rao revised the NEP. This education policy is known for the adoption of the Common Entrance Examination (CEE). The former Prime Minister of India, Manmohan Singh, introduced a revised "Common Minimum Program" policy. The Program of Action (PoA) 1992, under the NEP, 1986, planned a common entrance examination for all India-based vocational and technical training admissions.

Third National Policy on Education, 2020
In 2019, the Ministry of Human Resource Development (MHRD) released a Draft on NEP, 2019, which was trailed by several ideas and consultations offered by the stakeholders and public. The Draft NEP discusses reducing curriculum content to enhance essential learning and critical thinking.

The objective is to promote holistic experiential, discussion-based, and analysis-based learning. It also talks about a revision of the curriculum for the first time. The significant change is in pedagogical structure from a 10 + 2 + 3 system to a 5 + 3 + 3 + 4 system. The aim is an effort to optimize learning based on the cognitive development of children. On July 29, 2020, the cabinet (senate) approved a NEP intending to introduce numerous changes to the prevailing education system of India. Appropriate and liberal, the NEP 2020 scripts a significant advance in our education system.

RELATED POLICIES
There are several concurrent policies and documents which will help the NEP 2020. Table 1 attempts to specify these policies and documents.
Table 1: Relevant Policies and Concurrent Documents to NEP 2020

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Policy</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Right to Education (RTE)</td>
<td>To offer free and compulsory education to all children belonging to any age group and economic class as a Fundamental Right</td>
</tr>
<tr>
<td>2</td>
<td>National Programme for Education of Girls at Elementary Level (NPEGEL)</td>
<td>The objective was to reach the girls, where resources are “hardest to reach.”</td>
</tr>
<tr>
<td>3</td>
<td>Rashtriya Madhyamik Shiksha Abhiyan (RMSA)</td>
<td>To develop secondary education at the grassroots level</td>
</tr>
<tr>
<td>4</td>
<td>Saakshar Bharat/ Adult Education</td>
<td>To create a literate society and the target is non-literate and neo-literate of 15 years and older</td>
</tr>
<tr>
<td>5</td>
<td>Rashtriya Uchchatar Shiksha Abhiyan (RUSA)</td>
<td>For multi-facet improvements in the system of higher education and related procedure</td>
</tr>
<tr>
<td>6</td>
<td>Samagra Shiksha Abhiyan (SSA)</td>
<td>Predominant program for the school education to safeguard equitable learning</td>
</tr>
<tr>
<td>7</td>
<td>Inclusive Education for the Disabled at Secondary Stage (IEDSS)</td>
<td>To get higher enrolments from disabled/differently-abled students in secondary or higher education</td>
</tr>
<tr>
<td>8</td>
<td>District Primary Education Program (DPEP)</td>
<td>The main initiative is to revitalize primary education and uniformisation of education at the primary level</td>
</tr>
</tbody>
</table>

It was essential to understand which government or a political party has tried to foster a better education for developing the Indian education system. This paper attempts to collect the information based on different timelines, prime ministers of India, and major educational reforms (Table 2).

**METHODOLOGY**

Computer-Assisted Qualitative Data Analysis

Table 2: Timeline, Prime Ministers, and Significant Educational Reforms at Policy Level

<table>
<thead>
<tr>
<th>Education Policy Timeline</th>
<th>Prime Ministers</th>
<th>Education Policy Reforms</th>
</tr>
</thead>
<tbody>
<tr>
<td>1968</td>
<td>Indira Gandhi</td>
<td>Promoting higher education among rural and urban</td>
</tr>
<tr>
<td>1986</td>
<td>Rajiv Gandhi</td>
<td>Adult education and the empowerment of minorities</td>
</tr>
<tr>
<td>1992</td>
<td>PV Narasimha Rao</td>
<td>Common entrance examination for professional and technical education</td>
</tr>
<tr>
<td>2005</td>
<td>Manmohan Singh</td>
<td>Common minimum program</td>
</tr>
<tr>
<td>2016</td>
<td>Narendra Modi</td>
<td>Addressing the gender discrimination, formation of the educational tribunal, the common curriculum for Science, Mathematics, Environmental Studies, and English</td>
</tr>
<tr>
<td>2020</td>
<td>Narendra Modi</td>
<td>Reimagining vocational education, Catalyzing quality academic research in all fields by introducing the regulatory mechanism, Curbing commercialization of education, Effective governance and leadership for higher education, Internationalization of professional education, Promotion of Indian languages, arts, and culture</td>
</tr>
</tbody>
</table>
Software (CAQDAS) was employed to learn the concerns and focus of NEP 2020 in India. The qualitative method provides in-depth, socio-contextual, and elaborate descriptions along with insightful interpretations (Holloway & Galvin, 2016; Smith, & Cheater, 2011). The NVIVO 12 Plus was used for the analysis of this paper.

Qualitative analysis research adopts a prevalent form, which analyzes documents. The important policy and other forms of documents were analyzed and interpreted by the researcher to give meaning to an assessment framework (Bowen, 2009; Chima, 2020). There are two major categories of documents, which could be analyzed. These are as follows (O’Leary, 2014):

- **Public Records:**
  The documents which are available on public platforms, like websites, newspaper, repositories, mission statements, annual reports, policy manuals, student handbooks, strategic plans, annual budget, syllabi, etc.

- **Personal Documents/Archives:**
  Documents related to an individual’s actions, experiences, and beliefs. Examples include e-mails, blogs, posts on Facebook, and incident reports.

Analyzing documents, policies, and archives are a social and crucial research tool. It is an invaluable part of most schemes of triangulation (Bowen, 2009; Birt, et al., 2016).

The policy document of NEP 2020 was downloaded from the website of the MHRD (www.mhrd.gov.in). The English version of the document (66 pages) was used for analysis. For the specified purpose of this study, the higher education section was separated from the whole study, which is considered a separate document of 18 pages. This policy document, along with other Twitter sentiments, was analyzed to achieve the research objectives.

The second source of data was extracted from Twitter. NCapture, a utility offered by NVivo, was utilized to capture the tweets for analyzing the sentiments about the policy. The string used for the search was (“new education policy” OR “NEP”) AND “2020”). In total, 3,117 tweets were downloaded within one of the policy releases. The extraction was based on language, i.e. tweets that are not in English and abusive language were not considered (Figure 1).

The data was analyzed through the flexible tool of thematic analysis, which allows modifications as per the need of the research contributing with detailed, trustworthy data (Nowell, et al., 2017; Braun & Clarke, 2006). The method of thematic analysis was adopted due to its innate ability to facilitate the inquiry of the human experiences in objective settings (Percy, et al., 2015). Thematic analysis is a method that helps in recognizing, examining, and reporting a pattern in the detailed data and often helps in the interpretation of various aspects of the research topic (Alhojailan, 2012).

The data was analyzed in six steps as illustrated by Braun & Clarke (2006) which was initiated by the process of familiarization with the data, creation of initial codes, and identifying the main themes and their sub-themes. Qualitative data analysis software was employed for meticulous efficacy by adding rigor to the study (Alhojailan, 2012).

**DATA ANALYSIS**

To allow rigor and efficiency to the findings of the research, NVivo software was extensively used throughout the data analysis process. The data set (higher education policy and UGC downloaded from Twitter) revealed that the GOI has well-analyzed the requirements from higher education. The data indicated that public opinion was also considered and the international education system is also well-taken care of by making this policy.

**WORDCLOUD AND TREE MAP**

For better visualization of the results, Word Cloud and TreeMap were generated, based on...
frequency and percentage of words. Figure 2 shows a Wordcloud where the keywords are represented according to their frequency in the dataset (Sinclair & Cardew-Hall, 2008).

Figure 2 indicates the standard words related to higher education. These are in the center, surrounded by the other preferential words associated with the policy (institutions, university, development), terms related to research (research, multidisciplinary, vocational), the centricity (students, learning, community), ethics (standard, integrity, quality, regulatory), and teaching aids (teacher, faculty, knowledge).

A Treemap is a diagram that shows data in hierarchical order, as a set of nested rectangles of different dimensions, sizes, and shapes. Size indicates the amount based on frequency and percentage. The Treemap is scaled to fit the offered space best. The sizes of the rectangles should be considered in-network relation to each other which results in more extensive areas display at the top left of the chart, vis-à-vis, smaller rectangles display toward the bottom right (NVivo Help, 2020).

The Treemap resulted out of this analysis has shown three different aspects of the NEP of India (Figure 3). Following are the aspects:

- **Concerns**
  - Education
  - Institution
  - Research
  - Students

- **Focus**
  - Development
  - Multidisciplinary
  - Quality
  - Learning
  - Vocational
  - University

- **Anecdotes**
  - Teaching
  - Integrity
  - Policy
  - Regulation
  - Knowledge
  - Innovative
  - Enable
PROJECT MAP
Project maps are a graphical illustration of the combinations of nodes and important themes in one project. These themes combine homogeneous sub-themes in one theme. Whereas, the heterogeneous sub-themes are grouped in different themes. A project map is created to explore and present the connections among different essential themes. A project map is built when identifying the connection in themes is very challenging. Project maps are made of round or rectangular shapes that represent the different items in the project and connectors that show links between items of investigation. A project maps could be drawn to:

- Explore, organizes, and classify the data
- Develop ideas and building connecting blocks of theory
- Identify evolving patterns, theories, and their explanations, and
- Visually represent the links between project items

With the help of the project map of policy documents, three important themes could be identified (Singh & Dey, 2020). The names of themes are course, language, and students (Figure 4).

![Figure 4: Project Map of Themes Based on Policy Documents](image)

The focus of NEP 2020 is to address the severely fragmented higher educational ecosystem. This ecosystem is based on discipline, specificity, and technical ground. The boundaries are still not definite. The irony is that no system is trying to define the responsibility mechanism. The following are some concerns highlighted by NEP 2020:

- Less emphasis on the development of skills
- An unyielding separation of disciplines, early specialization lead students to narrow areas of study
- Limited access mainly in socio-economically deprived areas, very few Higher Education Institutions (HEIs) teach into local and regional languages
- Limited autonomy to teacher and institutions
- Faulty mechanisms for merit-based career management and lacking in the progression of faculty and leader at the institutional level
- Lesser emphasis on quality research at universities and colleges and lack of competitive and peer-reviewed research funding
- Suboptimal governance and leadership of HEIs
- An unproductive regulatory mechanism
- Large setup of affiliating universities resulting in substandard of higher education

Project Map in Figure 5 indicated the connections of themes and subthemes. This project map supports the previous map, which is drawn on the basis of the policy document. After combining all the tweets and policy documents, the inferences lead to the themes and subthemes, as shown in Table 3.

Table 3: Identified Themes and Subthemes Based on Policy Document and Tweets from Project Map

<table>
<thead>
<tr>
<th>Course</th>
<th>Language</th>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic course</td>
<td>Regional language</td>
<td>International</td>
</tr>
<tr>
<td>Professional course</td>
<td>Indian language</td>
<td>Students exchange</td>
</tr>
<tr>
<td>Vocational course</td>
<td>Foreign language</td>
<td>Equipping students</td>
</tr>
<tr>
<td>Basic course</td>
<td>Natural language processing</td>
<td>Young students</td>
</tr>
<tr>
<td>English language</td>
<td>English language</td>
<td>Help students</td>
</tr>
</tbody>
</table>
Table 3 elucidates the results on identifying the themes and subthemes, whereas Figure 5 can make a connection between those themes and sub-themes. Their connections are visible as parent (theme) and child (subtheme) themes.

Figure 6 explains the mind map of essential connotations, which are based on policy documents examined and tweets studied. NEP 2020 focuses on the development of the community. It has placed the contribution of teachers and institutions for involving the student so that they can develop themselves and contribute towards the growth and development of the country. Specifically, the objective of NEP 2020 is to involve engagement and the community. It also focuses on the development of students, academicians, systems, and higher education as well as primary education institutions. It is time the current Indian government opens up Indian education to private investment that will bring the expenses down. It is normal to perceive the job and commitment of independent schools in the arrangement account and the time is ripe for the government and free powers in instruction to begin adjusting and working together towards the country building. It is unreal to expect such enormous expenses are coming exclusively from the central government and simply for humanitarian activities.

The National Education Policy 2020 is a step to reform the existing education system of the country. It primarily focuses on imparting high-quality education to the students. It offers three languages which could be learned by the student so that the employability also increases across the country. It also focuses on offering advanced learning mechanism, which includes online courses and multidisciplinary approaches to the student. NEP 2020 not only focuses on the development of the community, the stakeholder, and the education system but it also revamps the current assessment criteria. It not only qualitatively but quantitatively assesses skills developed by the students and also gauges the objective knowledge of the students.

Figure 7 presents the bar chart of tweets made either positive or negative. A small number of tweets during the period were extremely negative. The moderately negative tweets were slightly higher than the extremely negative tweets. When combined, the NEP 2020 seems to be having a less negative impact as indicated by this histogram. It is also clear from
the histogram that the majority of the tweets are moderately positive. Moreover, a small number of trees were extremely positive. Overall, it is visible that the NEP 2020 is viewed positively by Twitter users. Positive sentiments indicate the welcome and acceptance of the NEP 2020. The number of negative tweets made for NEP 2020 is minimal in numbers, in comparison to the positive tweets.

DISCUSSIONS AND IMPLICATIONS
The National Education Policy 2020 is meant to rebuild school curricula and teaching method in another 5 + 3 + 3 + 4 plan so that school can be made applicable to the necessities and interests of students at various formative stages, i.e. a “Foundation Stage” (5 years), a “Preparatory Stage” (3 years), a “Middle Stage” (3 years) and the “High Stage” (4 years, covering grades IX, X, XI, and XII). The focus of NEP is to achieve “universal foundational literacy and numeracy” among students in primary schools by 2025. To ensure this government will be assessing and accrediting the schools on different criteria. The primary aim of the policy is to increase the gross enrolment ratio. From the study, it is clear that the objective of NEP 2020 is to create a conducive environment and institutions which support research in the higher education institutes and strengthen the foundation of education in India by reinforcing holistic development by offering vocational training to students at the elementary and primary education level too. The result also indicated that the central concern of the government is to evolve the current education system.

Along with developing institutions that are focused on research, it was thus enabling logical thinking and research aptitude among the students. The primary focus of the Indian government by introducing NEP 2020 is to develop the systems to ensure that quality education is imparted at both schools as well as university level. It also focuses on improving the quality of education and imparting integrity among the students as well as the academicians all across the country.

One of the great additions made in the NEP 2020 is to accredit the school education to ensure imparting quality learning to the student. The policy document focuses on various sub-themes. It addresses the concerns arising among the higher education institutes, which primarily are the development of courses, curriculum, and students. It also focuses on embedding languages for the students so that students from the most remote corners of the country can also be part of the mainstream. As far as the development of course and curriculum is concerned, it has been categorized into three major parts.

The examination reveals that the policy document focuses on the development of introductory courses, professional courses, and vocational courses for the students. The objective of developing courses is to develop a student’s attitude and aptitude. It also focuses on creating industry-ready and entrepreneurial orientation among the students. The NEP aims to increase the use of technology in education. There is a provision in the policy, technology or e-learning is the need of the hour (Kaurav, Rajput, & Baber, 2019). The policy also mentions that a National Education Technology Forum needs to be formed so that it could act as a podium where there can be the exchange of ideas on the use and development of technology. Previously, the education policies were offering exposure to the students which, in turn, would help the student to evolve. The current education policy focuses on a student exchange program that provides students with multiple exit points. It is visible from the examination in this study that the effort has been made to evolve the Indian education system and offer students international level pedagogy. Dr Bijaya Kumar Sahoo, Founder, SAI International Education Group; Advisor (Rank of Minister of State), Govt. of Odisha, correctly stated in one of the interview by India Today:

“With the flexibility for the choice of the subject across streams, this move in the National Education Policy is aimed at building skills in the students’ subjects of interest.”

It is expected that it would help students to select the subject and career of their choice. One of the most severe issues faced by students in India is the language. Many bright students are not able to come to their full potential as they do not have the option of studying in their regional language. Under the NEP, various multiple exit points will be offered to undergraduate students. India is a country where the language and dialect change every 20 miles. Furthermore, because of its enormous size, it becomes challenging for the government to ensure that
every student gets an opportunity. The great initiative taken by the government is to introduce languages for studying in school education so that there is no break in the education of the student, considering language as a barrier. The policy also focuses on the use of local language as an instruction medium till grade V. However, if accepted, it could well go till grade VIII or beyond. The student will have an option of regional languages as well as the third language, which would be acting as a bridging language. It is visible from the patterns made through the Word Cloud base examination, TreeMap, Project Map, and Mind Map of the content in NEP 2020.

This paper has also examined both the positive and negative tweets on Twitter for supporting NEP 2020. The NEP 2020 is futuristic and focuses on the development of an age-old education system based on Macaulayism and tries to infuse new two methods for upgrading and empowering students for their holistic development. It also focuses on the development of the educational institutions both at school and higher education levels so that the country can leap forward and can become a world power in the future. The NEP 2020 will focus on offering the crucial skills to students that are required in the current scenario. The best thing about NEP 2020 is that there is extreme flexibility in the subject choices available to the student. Subjects offered are Arts, Humanities, Science, Sports, and various vocational subjects. The government’s focus is to start vocational education from grade VI only. The policy also includes various internship opportunities.

CONCLUSIONS
The NEP 2020 offers an elaborative framework so that there can be development in the educational system of a country. Generally, it takes decades to replace the policy. The current policy is third in sequence and replaces the NEP 1986. The NEP 2020 provides a concrete path to education in the country. However, it is also not mandatory to follow. Under NEP 2020, the top universities across the world will be able to start their campuses in the country. Under the NEP 2020, there is an extensive focus on reshaping the curriculum. The board examinations will be reformed and there is much emphasis on the development of critical thinking among the students and offering experiential learning to them. The most important thing is that there will be an emphasis on teaching students all the subjects in their native language. The NEP 2020 addresses the need to create professionals in fields ranging from agriculture to artificial intelligence. India should be prepared for what's to come.

The essence of this policy is the introduction of the multi-disciplinary, inter-disciplinary, and trans-disciplinary approaches to humanise the education with an emphasis on humanities-related subjects. Now, even a student taking a professional degree can learn some subjects of humanities, this freedom was not available in earlier policies. Besides, this policy has got an emphasis on vocational skills to meet the growing employment needs as also the focus on employability through skilling. The present policy is considering the training of teachers as an important ingredient.

The flexibility is offered in the present policy, in education which would take care of high dropout levels through transferable credit banks. The emphasis is given to the mother tongue/ local language at the primary level, would surely minimize the dropouts level and improvise the learning capacities of students at primary level. The most important part of this new policy is the focus on Indianisation, which will lead to developing better citizens for the country.

Furthermore, the NEP 2020 makes ready ahead for some youthful, hopeful understudies to be furnished with the privilege skill set. Its appropriate execution will be the way into its prosperity. It will be carried out till grade V. With NEP 2020, it is expected to revolutionize the education scenario in the coming future and this will certainly push India’s claim towards becoming a superpower in the future.

REFERENCES


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