The study of online learning with respect to technological aspects of NEP

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Abstract
Education is the one of the important deciding factor of growth of an individual as well as for a nation. With the rise of pandemic, this field has faced a lot of chaotic situations in which quality of education along with student participation went down. This led to the increase in demand of online learning in the world. In India, the online education is not a smooth way of getting things done. There are a lot of barriers which occur in path of e learning in India. Undoubtedly, the nation has started taking measures to develop the digital infrastructure and is still in process to make it globally competent. NEP i.e. National Education Policy has been re-introduced by the government in 2020. It focuses on bringing about a change in the world of digital learning. This paper discusses about the measures taken by the government with respect to use of technology in field of education and their critical evaluation. In the second phase of the paper , the major barriers in e-learning and suggestions to overcome have been mentioned.
Keywords: *NEP, Higher Education, Online Education, Digital Education Market.*

I. Introduction

Technology has always been a crucial part since it has been developed. World cease to move forward without the innovation in the field of technology specifically. One can't state a time period where the need of technological advancements wasn't felt. It has made a base for the creation of new dimensions of universe. Nowadays we are so much dependent on it that we start a day with it by turning off the alarm on phone and ending with it by sending good night messages to loved ones. Technology can't be restricted to a specific dimension thus education hasn't been an exception. New technologies and ways to use existing technologies have been evolved to shape the day to day needs of education. That's why we have reached to an era where computer have become an important part of the education and announcements have been started to be done using whatsapp.

Talking about the current scenario where pandemic have disrupted the daily routines, education have been also affected by it. Closure of schools and colleges, disruption in management has created a void in the chattering and cheerful space. The only hope we had with the start was relying on the technology. Undoubtedly the technological needs were felt earlier as well but this specific period had shown how much we need to progress to catch everything up when the time is trying to push everyone backward with the spread of diseases. From maintaining records of students enrolled to carrying out examinations online we have travelled a lot in the field of education with the help of technology.

National education policy (NEP) year to year has helped to shape the symmetrical plan for the changes in educational field. As discussed technology has also been an important part of it. The keen interest in progress can't define the educational limits without the use of technology. Government to private institutions, rural to urban sector, everyone is trying to cope up with new growing technology. But the point raised now is that whether this growth will continue to exist when remote learning has been disrupted. Discussing about the National education policy of 2020, a lot of measures have been planned to be implemented as the desired changes were not experienced by the policy measures of the previous National Education Policy. But major question arises that how measures of National education policy can be implemented in such a way that desired results can be achieved this time?

OBJECTIVES
1) To understand the key measures of government in NEP with respect to use of technology in higher education.
2) To know the critical evaluation of the measures opted by government in NEP with respect to online learning.
3) To know the barriers arising in way of online learning.
4) To know the various measures to which can help to curb the barriers of online learning.

II.   Literature Review

In the research titled**, "A Critical study of NEP 2020: Issues, Approaches, Challenges, Opportunities and criticisms" by B.Venkateshwarlu,** it has been concluded that the**NEP** is helping a lot in achieving high enrollments in higher education in India. It has taken various measures like expansion of colleges adopting multidisciplinary approach, an agency National Research Foundation will provide funds for research, faculty members will also get freedom to choose curriculum etc. Thus NEP will be able to achieve its targets by 2030.

In the Research titled,**" New Education Policy 2020 of India: A theoretical Analysis" by Dr Hemlata Verma and Adarsh Kumar,** it has been concluded that if NEP gets implemented successfully then Indian will be among the leading nations of the world as it aims to universalize the higher education for the children by 2025.

In the research titled, **"Analysis of the Indian National Education Policy 2020 towards achieving its Objectives" by P.S. Aithal and Shubhrajyotsna Aithal,** it has been concluded that NEP is moving towards its objectives by planning innovative schemes which will further help to improve the attractiveness, affordability of learning . The boundaries of higher education will be widened by taking private sector into consideration as well for the higher education. Merit based admissions and free scholarships will also be provided to students along with providing freedom to the faculty for choosing methodology and pedagogy for teaching. The final check will be kept by the central agency through technology oriented monitoring systems.

RESEARCH DESIGN
This is the descriptive research based on data from secondary resources such as government educational magazines.

III.   Results

Online Education has been trending a lot especially talking about the post corona time where people are relying too much on digital world. Thus a lot measures have been taken to improve this sphere and bring it to the track of efficiency, affordability, accessibility and transparency. This paper discusses the major three aspects linked to online education. The very first aspect discusses the major government measures taken in NEP with respect to technology use in higher education and their criticisms. The second part talks about the major barriers of online education and in the last section some of the suggestions to overcome those barriers have been discussed.

A) MEASURES OF GOVERNMENT IN NEP WITH RESPECT TO USE OF TECHNOLOGY IN HIGHER EDUCATION
National education policy 2020 has embarked a lot of key measures where use of technology can be enhanced and also tried to create an authority that would take care of affairs of creating digital infrastructure in the country. NEP has tried to cover majorly all the aspects related to education in the institutions. Some of the key features are:
1) NETF Creation: An autonomous body, National educational technology forum has been set up to facilitate the innovative ideas on use of technology. This will help to bring about change in the traditional methods of teaching and invite change with greater participation. The platform provided also carries the responsibility to create link between institutions and new technologies. Not binding the boundaries, NETF have been provided with work of research and innovation. This could be a great step toward the overcoming barriers of the new researches of technology which could be used to enhance the educational quality and reach.
2) SEMINARS AND CONFRENCES: NETF have been provided with a special key point. This discusses about the conduction of seminars and conferences to discuss the evolved or researched technology. This will help to spread the ideas on major level so that authentic data reachability can be increased and required changes can be carried out in use of technology in field of education. Along with this it will help to provide teachers and educators with required trainings and will focus on streamlining planning and management to expect the change in educational institutions.
3) EDUCATIONAL SOFTWARE DEVELOPMENT: An attempt will be made to develop educational software which will help to provide e- content to the students and teachers. Appropriate measures will

be taken to provide it in all languages and in all areas to cover the problems of accessibility as technology based educational platforms will be provided to be coordinated with schools to create user friendly environment.

4) PILOT STUDIES: Appropriate agencies will be recognized to conduct the pilot studies which would help in integrated education. The results found will be communicated in such a way that it could provide efficiency in implementation.

5) DIGITAL INFRASTRUCTURE: Government will ensure the updation of the online platform to support the online education system and its smooth functioning. It will also ensure the technological based solutions to the problems arising in the way.

6) ONLINE TEACHING PLATFORM, E-TOOLS: Existing e-learning platforms will be used to provide teachers with the user friendly monitoring tools which will help them to connect to students in an easy way and check their progress along with their learning pace.

7)ONLINE CONTENT CREATION: A digital content reservoir will be formulated to store the information of courses and activities related to them. Along with this the steps would be taken to make learning better and fun by adding games related to course through which the students can learn with enjoyment.

8) THE DIGITAL DIVIDE: An initiative has been taken by the government for the people who have limited access to the online resources. For them the traditional methods of mass media will be used such as television and radio. Programs related to the course will be broadcasted in such a way that anyone can watch it anytime in the day and in various languages. This will help to cover the barriers of timing and languages.

9) VIRTUAL LABS: Government has tried to cover the availability of not only the theoretical aspect but practical also. Steps will be taken to use existing e- learning platforms for the development of virtual labs which will help to give practical knowledge to the students. To help with that government will try to provide the tablets to remove the gap of provision of having e-learning resources.

10)TEACHERS' TRAINING: Teachers will be provided with the training so that they could effectively teach the subject through e-learning platforms. This will help provide course material and required guiding for the completion of learning process of students. Not only this government will also be training teachers so that the student and teacher relationship can be built in such a way that problems can be communicated easily by the students to the teachers and they can take steps to resolve them.

11)ASSESSMENT AND EXAMINATIONS: Appropriate bodies like NTA and PARAKH will be taking steps to develop the required assessment ways so that they can check the skill attainment of the students specially focusing on the way they attained the skills as in online or offline and from where they can access to the assessment tests.

12) HYBRID MODE OF LEARNING: Along with the e-learning methods, measures to go for hybrid mode will also be taken to ensure the personal contact.

13) LAYING DOWN STANDARDS: To carry out the research on digital education NETF will be formulating the major guidelines regarding use of technology, course, curriculum etc. which will further be provided to the educational institutions.

CRITICISMS

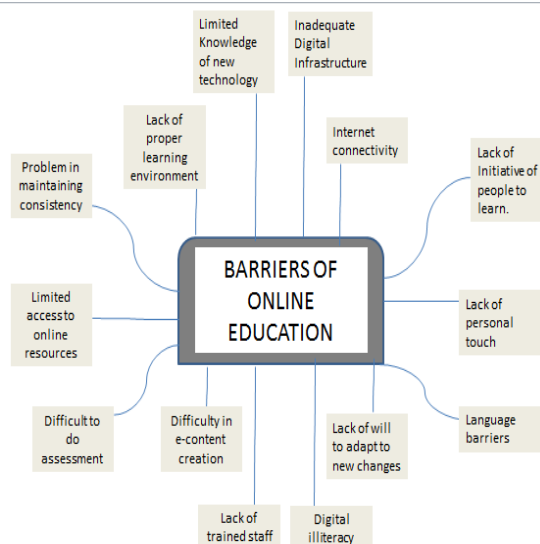| EXPENSIVE DIGITAL INFRASTUCTURE |
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| SOURCE OF NEFT POWERS |
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| LENGTHY PROCEDURE OF E-CONTENT CREATION |
| ISSUE OF ONLINE SEURITY |
| INTERNET CONNECTIVITY |
| LACK OF PERSONAL TOUCH |

1) EXPENSIVE DIGITAL INFRASTRUCTURE: As NEP focuses on developing digital infrastructure to overcome hurdles like diversity and language when it comes to online learning. But developing such software and providing hardware to provide accessibility to all would be a costly affair which will need a lot of investment. Thus to overcome this shortcoming a lot of time will be required to raise the funds.

2) DELAY IN DECISIONS: NEP involves a lot of promising components which need to be implemented with proper decisions taken, But putting all things together at practical level need a lot of quick and consistent efforts. Any delay or misjudged decision can put this process into long period plans of India for getting e learning at efficient stage.

3) DIFFICULT TO IMPLEMENT: As NEP itself states that funds have not been provided at lower level and if provided then also there was delay. Thus accomplishing the proposed changes will be a huge and complicated task for the government if implementation of the decisions is not effective at any level of education or the geographical area to bring the equity.

4) STUDENTS NOT ENROLLED IN OFFLINE LEARNING: People not only liv in urban areas. Providing education to all is still a challenge in rural areas. Government came up with a lot of schemes to get children enrolled in school in rural areas. As the number was increasing pandemic came with the shocking effects. According to Annual Status of Education Report (ASER) 2021, Non enrollment figures increased to 4.6% which was 2.5% in 2018.Thus not only government have to come with ideas of better ways of e learning but also how to get children enrolled for their usage.

5) SOURCE OF NEFT POWERS: NEP discusses about NETF (National Educational Technology Forum). A lot of decisions would be taken by NETF as it would be an advisory body to the central and state government for the matters concerning e education. But NEP doesn't clarify the major source through which NETF would be getting powers. NETF didn't ensure the proper implementation of the decisions concerned. Thus it would be difficult to bring the effective change if the decision making body can't ensure the results.

6) LACK OF TRAINED STAFF: NEP has tried to put best for the e learning experiences in India. It has aimed at the height which if achieved will surely lead to development. But bringing new software in the market will also require the trained staff which would guide the teachers so that lessons can be delivered effectively. A lot of programs have been initiated by the government to train the teachers like one of them is Nishtha. But will it be possible to provide learning instructions to all the teachers in India with the limited trained staff available.

7) LACK OF AWARENESS OF USE OF TECHNOLOGY: NEP tries to overcome shortcomings of geographical area, diversity, language and situations like of pandemic but fails to consider the fact that a lot of people in India doesn't have knowledge of internet usage. Though jio have increased the accessibility of internet in Indian markets, still according to ICUBE 2020 estimates 43% of total population of India have not used internet for once in their life. This creates a huge gap in the process of e learning.

8) LENGTHY PROCEDUCRE OF CREATING E-CONTENT: The remarkable move has been initiated by the NEP to bring growth in the field of education. Very first step towards the making learning online is creation of e-content. It is not an easy task to create content for a lot of courses and that also covering the diversity of any type. Thus it will take a lot of time to properly bring e-learning into the system in such a way it could be used replacing the offline methods of learning.

9) ISSUE OF ONLINE SECURITY: Cyber security has been one of the emerging concerns as the world is shifting to online modes. Education sector is not an exception. According to the report titled "Cyber Threats Targeting the Global Education Sector", Education sector faces 20% more threats in 2022. 58% of threats studied in Asia were found in India. In such case, security has also become a problem to be dealt with.

10) INTERNET CONNECTIVITY: Internet Connectivity has also been a major issue in India. In rural areas electricity has not been provided all the time. People face problem with regard to electricity. Although a lot of people lack internet literacy. Summing all these reasons we find issues with internet connectivity in India especially in rural areas.

11) LACK OF PERSONAL TOUCH: With the growing online mode of learning, personal touch is lacking these days. This have been explained also in the article titled "With online education becoming the new normal, are we missing out on the personal touch?" written by Dr Ritu Dewan in magazine 50 effective principals 2021.Thus no software can cover this gap.

B) BARRIERS TO ONLINE EDUCATION

C) SUGGESTIONS TO REMOVE THE BARRIERS OF ONLINE EDUCATION

As we discussed that NEP proposes measures which could bring the desirable changes in the education sector. It proposes technological advancement and digital infrastructure which will open a new dimension of learning. Criticisms which have been observed are needed to be removed to bring efficiency and curtail the negatives from the proposal. Thus here are the suggestions which if followed will help to minimize the negative:

1) SPREADING AWARENESS REGARDING NEED OF ONLINE LEARNING: People tend to deny the change in general. There are people especially in rural areas that haven't used internet even for once in their life. Thus initiatives should be taken to spread awareness regarding the need of online education. In the paper " Student Awareness Towards E Learning In Education" written by Azliza Yacob,Aini Zuriyatii Abdul Kadir,O. Zainudin, A. Zurairah, it is highlighted that proper implementation should assure 3 aspects which are usefulness, ease of use and self- efficiency. Thus government need spread the awareness regarding all 3 aspects so that people can know about the need of bringing change.

2) MORE INVESTMENT FOR EDUCATIONAL SECTOR: Education is the ever growing sector. One huge investment won't be able to maintain its position of making students globally compatible. Government plan to invest approximately 6% of the GDP in educational sector every year. According to Economic Survey of India 2019-20 it was only 2.8%, in 2020-21 it was 3.1% and even by increasing the investment it is still 3.1% in 2021-22. Thus government needs to take actions to invest more in educational sector.

3) PROPER IMPLEMENTATION OF PLANS: Government has always come up with the timely measures to keep a check on improvement in all sectors. NEP is also one such measure with which India tries to achieve a clear picture of literate people of the country. Major obstacle arises when the policies are not implemented in a right way. Work of making theoretical plans will only be completed once implemented. Undoubtedly NEP has started showing the results but still has not been able to fully achieve its goals. Thus measures to check implementation of policies are also required to be followed.

4) MEASURES TO PROVIDE INTERNET CONNECTIVITY: Internet connectivity has also been one of the problems arising in implementation of NEP in India. According to the UNESCO's State education report, 2021, the availability of computers in Indian schools has been only 22% and only 19% schools have internet connectivity. Thus to overcome the barriers of NEP, the government need to start by overcoming the problem of internet connectivity which would be focusing mainly the educational institutions.

5) TEACHER TRAINING:Government has come up with amazing measures like development of NISHTHA, DIKSHA etc. so that faculty can have access to the e content and also know of various current policies by the government to take actions accordingly. But will these measures help to train teachers with the upcoming e learning software is the question which is doubtful in nature. Dealing with new technologies and replacing them with traditional methods is a great challenge in front of government. Government can allot the trainers in different areas covering a specific number of schools so that they can ensure that teachers are well aware of the new techniques of teaching online.

6) BETTER DIGITAL INFRASTRUCTURE:Digital Infrastructure has become one of the emerging needs of the people of the country. India has made progress in that aspect but not up to that extent. It still lacks the accessibility and equity issues. Digital infrastructure has been considered as one of the major factor of

development and India has to make more investment to fully establish it in proper systematic way. Even the report digital infra- unlocking the tower power released by the EY joint in collaboration with Digital Infrastructure Providers Association (DIPA) also suggests that India needs to invest more in building strong digital infrastructure as India is moving towards next phase of using 5G internet .

7) OPEN EDUCATIONAL RESOURCES: Open educational resources have provided users with great opportunity to use the information they require anytime and anywhere. This also started the problem of breach of license issue. This challenge have been discussed in the paper titled "Open Educational resources: opportunities and challenges" written by Dr Jan Hylen . In the paper he mentioned that in some open educational resources, to utilize information from site one has to provide their original work first.in this process the credit which a writer should get is being stolen. Thus government should recognize some of these challenges and take strict measures for them.

8) CYBER SECURITY: With the rise of corona the need of shifting to online education has increased immensely but the threat of cybercrimes have also increased with that. Government need to spread the awareness about it. Along with awareness the measures defined for the protection against cybercrimes should be clarified. Undoubtedly government has started taking actions in this aspect. Union minister for HRD, Shri Ramesh Pokhriyal Nishank launched information booklet "Safe online learning in the times of covid 19" to raise awareness. Public also need to start taking actions to learn and implement measures suggested by the government.

9) ONE TO ONE SESSIONS: Classes have been shifted to the online mode from the offline mode. This has resulted in a lot of problems. One of them is the lack of personal touch. In the time of pandemic, it would be difficult to do that offline. To ensure the personal care and attention a session should be conducted where teachers can contact to students in one to one session once in a month. Counselors should be assigned the duty to know the well-being of students as the mental health gets disturbed when they don't get to meet the disciplined routine in daily life.

IV. Summary

NEP (National education policy) was re-introduced by the government in 2020. In this document government has mentioned about a lot of measures which will help to bring growth in field of education by the use of technology. One of the major measures is the formulation of NETF. This body will take care of the steps which will help to bring the innovation in the existing technology in field of education. It will help the institutions to bring about the positive change and also will also take measures to conduct more seminars and conferences and will support the research work. Not only this, it will also take care of e content creation which will be beyond the disadvantages like language barriers, culture differences etc. Government is undoubtedly putting efforts to minimize the gap of inefficiency in digital infrastructure. Still there are some hindrances which need to be concerned like the problem of internet connectivity, Lack of funds etc. these hindrances can be curtailed by following steps like trying to invest 6% of GDP in education sector as decided for NEP, spreading awareness of digital literacy, training of the teachers to make them comfortable with the new technologies for teaching. Despite all the critically evaluated pointers, NEP has surely started showing the results. It is a long process which will require the consistency in the efforts to make India digitally powerful especially concerning the education area.

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