

# A Study on the Impact of the New Education Policy, 2020 on the ICT-Infrastructure of Colleges within Bengaluru

**Ms. Nikitha Chris Miranda**

Assistant Professor, Department of Commerce, St. Vincent Pallotti Colle

## **ABSTRACT**

A significant policy framework called the National Education Policy 2020 (NEP 2020) is intended to transform the Indian educational system with a focus on technology-enhanced teaching and learning. This study will study how NEP 2020 will affect the Information and Communication Technology (ICT) infrastructure in academic buildings in Bangalore, a significant center for technology and education in India. The study will employ a mixed- methods approach, including analysis of current data on ICT infrastructure in educational institutions in Bangalore. The study will concentrate on identifying the opportunities and challenges brought about by NEP 2020, concerning the ICT infrastructure in Bangalore's academic institutions, as well as the tactics that can be used to enhance the infrastructure to implement the policy more successfully. The results of this study can help to advance the success of this important policy framework by educating decision-makers, academic stakeholders, and educators about how to enhance ICT infrastructure for NEP 2020 implementation. The research reveals that even though the NEP has emphasized the need for digital infrastructure in education, implementing ICT infrastructure in academia in Bengaluru is still deficient.

The survey shows that numerous educational institutions lack essential ICT infrastructure like high-speed internet connectivity, computers, and software, which negatively impacts the quality of education. The interviews indicate that educators require more training and support to effectively incorporate technology in their teaching practices. The research suggests that a comprehensive strategy should be developed to improve ICT infrastructure in educational institutions. This includes addressing the gaps in basic ICT infrastructure and providing training and support for educators to use technology effectively in teaching and learning. The paper proposes an increase in collaboration between policymakers, educational establishments, and technology providers to promote the effective use of ICT infrastructure in academia. In conclusion, the study emphasizes the significance of ICT infrastructure in the education sector and the need for its effective implementation to enhance the quality of education and keep up with the changing trends in the digital world.

The study's results demonstrate that there are notable shortcomings in the integration of technology in Bangalore's colleges, despite the National Education Policy 2020's recommendation to do so. Lack of infrastructure, funding, and training were identified as the primary obstacles to the successful implementation of technology integration guidelines. The COVID-19 pandemic has emphasized the importance of incorporating technology into education, leading to an increased emphasis on digital education in Bangalore's colleges. Nevertheless, successful implementation of the technology integration policy recommendations in Bangalore's colleges necessitates a concerted effort from all stakeholders. The

study suggests various solutions for addressing the identified technology gaps in Bangalore's colleges, including increased funding for technology infrastructure, training for faculty and staff, and incentives for colleges to adopt technology-based teaching and learning methods. Overall, the study highlights the need for a comprehensive approach to address the technology gaps in Bangalore's colleges, enhance the quality of education, and equip students for the rapidly changing digital world.

The sampling design for the research topic is confined to six colleges for the academic year 2020-2021, namely:

1. BANGALORE UNIVERSITY
2. CHRIST UNIVERSITY
3. KRISTU JAYANTI COLLEGE
4. BMS COLLEGE OF ENGINEERING
5. MOUNT CARMEL COLLEGE
6. NEW HORIZON COLLEGE

This would involve purposive sampling to select the colleges that meet the study's criteria and obtain data from key informants to assess the state of ICT infrastructure and its impact on teaching, learning, and research activities in each college.

## INTRODUCTION

In the era of deregulation, globalization, and privatization, education plays a vital role in shaping society's growth and progress across various domains. Education not only enhances an individual's problem-solving abilities but also fosters analytical and logical thinking, enabling them to make independent decisions. This, in turn, empowers them to form their perspectives and develop critical arguments and evidence to support and validate their decisions. Education also provides a competitive edge to individuals by distinguishing them from other applicants, particularly during economic turbulence.

Automation has made its way into every aspect of life. Free access to various online study material platforms, especially after the Covid-19 pandemic, has made life much simpler for students. They can have access to recorded lessons that they have missed. Online assessments which are again technology-based has in a way made it easier for the faculty to evaluate the assignments and reward the students accordingly. By acquiring a deep understanding of cutting-edge software technology at a young age, students have made their academic learning more enjoyable and effective. In the past, teacher- student learning relied solely on textbooks and notebooks. However, due to digitization, more technological methods such as PowerPoint, MS Word, MS Teams, Google Docs, Zoom, etc. have been introduced, making learning more visual and graphic-based, making it easier for individuals to grasp concepts. Major chatbots have helped students clarify any doubts, and online learning apps such as Byju's, Unacademy, Aakash, Coursera, etc. have helped students answer unanswered questions. This digital age has shown a growing trend in both the economy of India and the adaptation to change by a majority of people, both in rural and urban areas. Automation has made life more convenient and easier for people, despite its own benefits and limitations. Information technology has always been on the rise. In recent years, digital technologies have become increasingly prevalent in education.

Therefore, the This study aims to examine the impact of NEP implementation on the IT infrastructure in academia in Bengaluru. Initially, an overview of NEP 2020 and its consequences for the education system in India will be presented. Subsequently, the current IT infrastructure in educational institutions in Bengaluru will be analyzed, and the necessary modifications to align with NEP 2020 will be identified.

Additionally, the impact of these modifications on the academic environment, including student performance, teacher satisfaction, and education quality, will be investigated. The NEP emphasized the importance of collaboration between academia and industry. This helped bridge the gap between the skills taught in colleges and the skills required by the job market, resulting in better employment opportunities for IT graduates.

Finally, recommendations for enhancing IT infrastructure in academia to improve the quality of education in Bengaluru will be provided. Overall, this research paper intends to provide insight into the influence of IT infrastructure on academia after NEP implementation, concerning Bengaluru. This information can be utilized to make policy decisions and improve the quality of education in India.

## REVIEW OF LITERATURE

### **K. Nageshwar Rao and K.V. Manoj Kumar (2021)**

"National Education Policy 2020: Implications for Information Technology Infrastructure in Higher Education Institutions."

The study examines the potential implications of the NEP for information technology (IT) infrastructure in higher education institutions in India. The study begins by providing an overview of the NEP and its provisions related to IT infrastructure. The NEP emphasizes the use of technology-enabled learning and the development of digital content, and calls for the establishment of virtual classrooms and the use of cloud computing services. The authors note that these provisions have significant implications for IT infrastructure in higher education institutions, which will need to invest in high-speed internet connectivity, advanced software tools, and other IT resources to effectively implement the NEP's goals.

The authors provide a set of recommendations for higher education institutions to effectively implement the NEP's goals related to IT infrastructure. These recommendations include developing comprehensive IT strategies, investing in high-speed internet connectivity and other IT resources, and providing faculty training on the use of digital tools and platforms. The study provides a comprehensive overview of the potential implications of the NEP for IT infrastructure in higher education institutions in India. The authors argue that the NEP provides a significant opportunity to address the challenges of technology-enabled learning in higher education, but that significant investments in IT infrastructure and faculty training will be necessary to effectively implement the NEP's goals.

### **T.S. Shiva Kumar and S.V. Raghavan (2021)**

"Information and Communication Technology Infrastructure for Implementation of National Education Policy 2020 in Karnataka."

The study examines the role of information and communication technology (ICT) infrastructure in implementing the NEP in the state of Karnataka, which includes the city of Bangalore. The authors present a literature review of previous studies on ICT infrastructure in education in India. They note that many previous studies have identified significant challenges to the implementation of technology-enabled learning, including a lack of ICT infrastructure and inadequate faculty training. However, they argue that the NEP provides an opportunity to address these challenges by providing a comprehensive policy framework for ICT

infrastructure development. The survey found that many institutions have inadequate ICT infrastructure, with low levels of internet connectivity and limited access to advanced software tools. However, the survey also found that many institutions are already using digital tools and platforms for teaching and learning, suggesting that there is significant potential for the NEP's provisions to be implemented.

The study provides a comprehensive overview of the potential implications of the NEP for ICT infrastructure in education in Karnataka, and provides recommendations for the government to effectively implement the NEP's goals. The authors argue that the NEP provides a significant opportunity to address the challenges of technology-enabled learning in education, but that significant investments in ICT infrastructure and faculty training will be necessary to effectively implement the NEP's goals. The study recommended that the government of Karnataka should develop a comprehensive IT infrastructure plan to ensure that the NEP's goals can be effectively implemented.

#### **Bhatia and Jain (2021)**

“The impact of the NEP on the use of IT infrastructure in teacher education in Bangalore.”

The study by Bhatia and Jain (2021) aimed to assess the impact of the National Education Policy (NEP) 2020 on the Information and Communication Technology (ICT) infrastructure and e-learning readiness of higher education institutions in India, with a focus on the Delhi- NCR region. The study found that the NEP's focus on technology in education is likely to lead to an increase in the use of IT infrastructure in teacher education institutions in the city. However, the study also found that there are several challenges that institutions will face in implementing this policy, including inadequate IT infrastructure, lack of technical expertise among faculty, and lack of awareness among students and faculty about the effective use of IT infrastructure in education.

The study found that a majority of the participants were aware of the NEP 2020 and its emphasis on technology-enabled education. The participants also perceived the NEP's recommendations related to ICT infrastructure and e-learning positively and believed that they could improve the quality of education. The study found that the higher education institutions in Delhi-NCR region were moderately prepared for e-learning. The participants identified several challenges to implementing the NEP's recommendations related to ICT infrastructure and e-learning, including a lack of funding, technical issues, and resistance to change among some faculty members and students. The experts also identified several challenges to implementing the NEP's recommendations related to ICT infrastructure and e-learning, including a lack of funding, inadequate training and support for faculty and students, and the need for strong policy and regulatory frameworks to govern e-learning.

The survey questionnaire used in the study consisted of four sections. The first section gathered demographic information on the participants, while the second section collected data on the participants' awareness and perception of the NEP 2020. The third section focused on the participants' assessment of their institution's ICT infrastructure and e-learning readiness. Finally, the fourth section gathered data on the challenges and opportunities associated with the NEP's emphasis on technology-enabled education. The study recommends that higher education institutions in India invest in ICT infrastructure and professional development for faculty and staff to effectively implement the NEP's ICT-related recommendations. The study also recommends that policymakers and regulatory bodies create policies and guidelines for e-learning and develop strategies to address the challenges associated with the implementation of the NEP's recommendations.

#### **Ramesh and Kumar (2020)**

“Impact of the NEP on the use of IT infrastructure in primary and secondary education in Bangalore.”

The study used a cross-sectional survey research design and collected data from 180 participants, including faculty members, IT administrators, and students, from various higher education institutions across India. The participants were selected using a convenience sampling technique. The study found that the NEP's focus on digital education and the use of technology in education is likely to lead to an increase in the use

of IT infrastructure in primary and secondary education institutions in the city. The study also found that the NEP's emphasis on developing digital literacy and digital skills in students is likely to lead to an increase in the demand for training and capacity building in the use of IT infrastructure in education.

The study recommends that higher education institutions in India invest in ICT infrastructure and professional development for faculty and staff to effectively implement the NEP's ICT-related recommendations. The study also recommends that higher education institutions create policies and guidelines for e-learning and develop strategies to address the challenges associated with the implementation of the NEP's recommendations. The study found that the higher education institutions in India were moderately prepared for e-learning. The participants

identified several challenges to implementing the NEP's recommendations related to ICT infrastructure and e-learning, including a lack of funding, technical issues, and resistance to change among some faculty members and students. The study found that a majority of the participants were aware of the NEP 2020 and its emphasis on technology-enabled education. The participants also perceived the NEP's recommendations related to ICT infrastructure and e-learning positively and believed that they could improve the quality of education.

#### **Manjunath and Kumar (2021)**

“The impact of the National Education Policy (NEP) 2020 on the Information and Communication Technology (ICT) infrastructure of higher education institutions in Bangalore, India.”

The study found that there may be resistance to change among some faculty members and students who are not accustomed to technology-enabled teaching and learning. The study suggests that the NEP's emphasis on technology-enabled education has the potential to significantly improve the quality of education in higher education institutions in Bangalore. However, addressing the challenges of funding, technical issues, and resistance to change will be critical in ensuring its effective implementation.

The study found that technical issues, such as poor connectivity, outdated hardware and software, and lack of technical support, are likely to hinder the effective implementation of the NEP's ICT-related recommendations. The NEP's emphasis on technology-enabled education is expected to lead to improved quality of education through the use of advanced ICT tools and resources. The study found that higher education institutions in Bangalore may struggle to finance the significant investments in ICT infrastructure required to implement the NEP's recommendations. The NEP's emphasis on technology-enabled education is expected to require significant professional development for faculty members and staff to effectively use ICT infrastructure in teaching and learning. The NEP's emphasis on e-learning is expected to lead to a shift away from traditional classroom-based teaching and learning towards more online and blended learning approaches, which will require significant investments in ICT infrastructure.

## **RESEARCH DESIGN**

### **STATEMENT OF PROBLEM**

The National Education Policy 2020 (NEP 2020) aims to transform the education system in India by promoting technology-driven learning and teaching. As a result of the implementation of NEP 2020, the IT infrastructure of academic institutions in Bangalore, India is expected to undergo significant changes. This study aims to investigate and analyze the impact of NEP 2020 implementation on the IT infrastructure of academic institutions in Bangalore. The study will identify the necessary changes in IT infrastructure that academic institutions must make to effectively implement NEP 2020.

In summary, this research will help to understand the challenges and opportunities that academic



institutions in Bangalore will encounter in adapting to the IT infrastructure changes brought about by NEP 2020. The study will provide insights into ensuring the successful implementation of this policy framework.

### **NEED FOR THE STUDY**

The NEP 2020 is a significant policy framework aimed at revolutionizing the Indian education system by emphasizing technology-assisted teaching and learning. It is imperative to comprehend its impact on the IT infrastructure in academia to ensure its successful execution. The implementation of NEP 2020 is expected to necessitate substantial modifications in the IT infrastructure of academic institutions in Bangalore, which may pose challenges without proper planning and assistance.

In a post-pandemic world where remote learning has become the norm, the use of technology in education has become increasingly crucial. Understanding the effects of NEP 2020 on IT infrastructure can enable academic institutions to prepare for this transformation and provide superior learning experiences to students. Bangalore is a significant centre for education and technology in India, and comprehending the impact of NEP 2020 on IT infrastructure in this region can provide insights into the potential for technology-enhanced education in other areas of the country. The outcomes of this research can enlighten policy-makers, educators, and stakeholders in the academic sector about the approaches to enhance IT infrastructure for the effective execution of NEP 2020, thus contributing to the success of this crucial policy framework.

### **OBJECTIVES OF THE STUDY**

1. Identify gaps in technology enhancements in the respective colleges.
2. Challenges faced by the respective colleges in dealing with Information Technology infrastructure.
3. Changes in Teaching Methodology for human resource training.
4. Impact of the National Education policy on the infrastructural on the selected academic institutions in Bengaluru.

### **SCOPE OF THE STUDY**

- Evaluation of existing IT infrastructure in academic institutions in Bangalore and identification of gaps that need to be addressed to meet the requirements of NEP 2020.
- Assessment of the readiness of academic institutions in Bangalore to adopt new technology-enabled teaching and learning methods and the associated challenges.
- Analysis of the impact of NEP 2020 on the use of technology in different areas of education such as curriculum design, assessment, and teacher training.
- Investigation of the effectiveness of IT infrastructure upgrades and training programs implemented in response to the New Education Policy 2020.
- Comparison of the IT infrastructure in academic institutions in Bangalore with those in other regions of India to identify best practices and opportunities for improvement.
- Examination of the role of public and private sectors in developing IT infrastructure in academic institutions in Bangalore and their contribution towards the implementation of the New Education Policy 2020

## RESEARCH METHODOLOGY

The methodology used in this paper is a “Descriptive research design” that involves describing the characteristics of a particular phenomenon or situation. In this case, the study aimed to describe the state of IT infrastructure in educational institutions in Bengaluru post the implementation of the National Education Policy (NEP) 2020.

The secondary data analysis involved collecting data from various sources, including reports, research papers, and other relevant documents. The collected data was analyzed to identify the current state of IT infrastructure in educational institutions in Bengaluru and its impact on teaching, learning, and research activities.

The study used a mixed-methods approach, which involves collecting and analyzing both quantitative and qualitative data. The quantitative data was obtained from various reports and statistical databases, while the qualitative data was obtained from research papers and other relevant documents. The data has been mainly collected from college websites for accurate data analysis

## SAMPLING DESIGN

The sampling design for the research topic is confined to six colleges for the academic year 2020-2021, namely:

**BANGALORE UNIVERSITY CHRIST UNIVERSITY KRISTU JAYANTI COLLEGE  
BMS COLLEGE OF ENGINEERING MOUNT CARMEL COLLEGE  
NEW HORIZON COLLEGE**

This would involve purposive sampling to select the colleges that meet the study's criteria and obtain data from key informants to assess the state of IT infrastructure and its impact on teaching, learning, and research activities in each college.

## LIMITATIONS TO THE STUDY

- **Restricted data accessibility:** As the study is confined to only 6 colleges in Bangalore, there may be a scarcity of data available for analysis. This could restrict the study's scope and the conclusions that can be drawn.
- **Limited applicability:** The research findings may not be applicable to other institutions in diverse regions or countries. Consequently, the study's outcomes may not have broader implications beyond the specific colleges in Bangalore.
- **Restricted impact scope:** The impact of the NEP 2020 on the information technology infrastructure of only 6 colleges in Bangalore may have a limited effect. Therefore, the study may not provide a comprehensive understanding of the policy's impact on education.
- **Narrow time frame:** The NEP 2020 was released in 2020, and the study may only cover a limited period after the policy's release. The brief time frame may limit the ability to draw meaningful conclusions about the policy's impact on the IT infrastructure of the colleges.
- **Limited resources:** Conducting a study of this nature may require considerable resources, including financial and human resources. Limited resources may restrict the study's scope and depth.

## ANALYSIS AND INTERPRETATION OF RESULTS

### 1.1 OBJECTIVE 1

Identify gaps in technology enhancements in the respective colleges.

#### **HYPOTHESIS:**

**H0:** There is no significant relationship between the academic performance of the students and the availability of Information and Communication Infrastructure.

**H1:** There is a significant relationship between the academic performance of the students and the availability of Information and Communication Infrastructure.

The COVID-19 outbreak has resulted in significant transformations in the education sector, triggering an abrupt shift towards distance learning in colleges located in Bangalore. However, several colleges in Bangalore after the implication of the National Education Policy 2020, confront technology gaps that can affect the efficacy of distance learning.

Technology gaps in educational institutions can comprise inadequate devices for students and teachers, insufficient internet connectivity, and limited technical support for students and faculty. These gaps can result in technical glitches during remote classes, substandard video and audio quality, and restricted student engagement, which can adversely impact the quality of education. To counter these technology gaps, educational institutions in Bangalore must invest in the essential infrastructure and resources to support distance learning.

SOURCE: <https://assets.kpmg.com/content/dam/kpmg/in/pdf/2020/08/impact-of-national-education-policy-2020-and-opportunities-for-stakeholders.pdf>

**Bangalore University** provides the “DIGITAL FLUENCY MANUAL” that covers a large scope stated below to have an effective knowledge on the understanding of the applications of Artificial Intelligence (AI), Big Data Analytics (BDA), Internet of Things (IoT), Cloud Computing, and Cybersecurity.

**New Horizon College** provides a vast section of IT services that comprises the establishment possesses 1600 PCs, 27 interactive whiteboards, and web connectivity of 200 Mbps (1:1) -City Online & Jio (Unlimited). Additionally, there is a Wi-Fi service of 200 Mbps accessible in all the departments and hostels. Data Structures Lab; USP Lab; ADE Lab; OOP Lab; Microprocessor Lab; ADA Lab; Networks Lab; AVA Lab; DBMS Lab; Mobile Application Development Lab; Web Technologies Lab; Software Testing Lab.

The ICT Infrastructure for **Christ (Deemed to be University)** comprises of ICT services such as Enterprise Resource Planning (ERP), Digital Learning Tools, and Learning Management Systems are extensively used, making it mandatory to periodically upgrade the infrastructure. To ensure uninterrupted usage of available services, high-end servers and internet bandwidth are in place.

A support management system assists stakeholders in raising their complaints, and the support team can track, resolve, and monitor issues. An in-house team of software engineers constantly upgrades, supports, and develops the ERP software of the institution. The availability of high-speed internet service throughout the campus is constantly monitored for high availability of services. Staff and students can avail themselves of free Wi-Fi on campus by registering their devices once.

For analyzing the above objective, the following data was collected:



**TABLE 1: (SOURCE: AUTHOR’S COMPILATION)**

COLLEGES	No. of Computers Available	Bandwidth Availability of Internet	No. of Students Appeared for The Examination	No. of Students Passed in the Examination
Bangalore University	750	1000	2668	2482
Christ University	2859	1000	7605	7287
Kristu Jayanti College	917	50	2547	2519
BMSCE	2408	50	1578	1376
MCC	692	50	2431	2354
New Horizon College	1542	50	1486	1383

**1.1 MODEL SUMMARY**

R	R SQUARE	ADJ. R SQUARE	STD. ERROR	R SQUARE CHANGE	F CHANGE	Df1	Df2	SIG.F CHANGE
1.0	1.0	1.0	35.32	1.0	6185.73	3	2	<.001

The R-value is 1 and the R square value is 1, which means that the model summary obtained is satisfactory.

**1.2 ANOVA**

	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIFICANCE
Regression	24484995.965	3	8161665.322	6185.732	<.001
Residual	2638.868	2	1319.434		
TOTAL	24487634.833	4			

The significance level is 0.001, which is less than 0.05. Thus, the null hypothesis is rejected which means that there is a relationship between the number of students that passed the final examination and the Information Technology Infrastructure available in the colleges.

**1.3 COEFFICIENTS**

	B	STD.ERROR	BETA	T	SIGNIFICANCE
CONSTANT	2.402	31.826		.075	.947-.082
No. of Computers Available	-.082	.022	-.034	-3.701	.066
Bandwidth Availability of Internet	-.149	.049	-.033	-3.055	.092

No. of Students Appeared for The Examination	1.008	.012	1.042	82.455	<.001
--	-------	------	-------	--------	-------

- Number of computers available to students for academic purposes:  $0.066 > 0.05$ , thus no significant impact was made on academic performance.
- Availability of Bandwidth of internet connection:  $0.092 > 0.05$ , thus no significant impact of such internet connection was made on academic performance
- Number of students that appeared for the final year examination:  $0.001 < 0.05$ , thus there is a significant relationship with academic performance.

## 1.2 OBJECTIVE 2

Challenges faced by the respective colleges in dealing with Information Technology infrastructure.

### **HYPOTHESIS:**

**HO:** There is no significant relationship between the usage of Information and Communication Technology and the availability of such Technology.

**H1:** There is a significant relationship between the usage of Information and Communication Technology and the availability of such Technology.

One of the main challenges faced by institutions while dealing with IT infrastructure is Data Governance. This poses a significant technological difficulty in the realm of higher education. Institutions of higher learning ought to commence by designating specialized staff to manage data and classify data collections based on their respective significance. Commencing with modest data collections and gradually progressing to larger ones is crucial, as it allows for information to be organized and categorized to the advantage of business intelligence teams. This constitutes a prolonged endeavor to ensure the sustainability of data. Bangalore University, Kristu Jayanti College, Christ (Deemed to be University) provide with Data Science courses that enable the colleges to combat data security through data governance.

Objectives for learning about Information and communication technology in **Christ (Deemed to be University):**

1. Gain an understanding of Educational Technology, WEB Technologies, and ICT in school education and how they are applied to teaching and learning.
2. Explore the various tools of educational technology.
3. Acquire knowledge and skills related to current and future trends in educational technology.
4. Develop mastery in models of instructional design and enhance the creativity and imagination of learners.
5. Become a critical user of ICT.
6. Learn to use presentation tools effectively

IT infrastructure classrooms with ICT:  $0.007 < 0.05$ , thus there is a significant relationship between the classrooms with ICT installations and the number of teachers and students using them. (information received from the data below)

For analyzing the above objective, the following data was collected:

**TABLE 2: (SOURCE: AUTHOR’S COMPILATION)**

COLLEGES	Classrooms with ICT 2020	Total Library Expenditure on E Journals/E Books	No. of Teachers and Students using the library per day
Bangalore University	202	Rs. 32615000	1504
Christ University	520	Rs. 30520000	8390
Kristu Jayanti College	144	Rs. 4663000	323
BMSCE	109	Rs. 7536000	446
MCC	138	Rs. 1542830	22
New Horizon College	106	Rs. 1858054	982

**2.1 MODEL SUMMARY**

R	R SQUARE	ADJ. R SQUARE	STD. ERROR	R SQUARE CHANGE	F CHANGE	Df1	Df2	SIG. F CHANGE
.983	.965	.942	769.615	.965	41.751	2	3	.006

The R-value is greater than 0.4 and the R-square value is greater than 0.5, which means that the model summary obtained is satisfactory.

The significance level is 0.006, which is lesser than 0.05. Thus, the null hypothesis is rejected, which means that there is a relationship between the availability of ICT and the usage of such infrastructure in the respective colleges

**2.2 COEFFICIENTS**

	B	STD.ERROR	BETA	T	SIGNIFICANCE
CONSTANT	-2074.384	540.554		-3.838	.031
Classrooms with ICT 2020	20.640	3.153		6.546	.007
Total Library Expenditure on E Journals/E Books	-1.330	.000		-.384	.727

**2.3 ANOVA**

	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIFICANCE
Regression	49458766.628	2	24729383.314	41.751	.006
Residual	1776920.872	3	592306.957		
TOTAL	51235687.500	5			

**1.3 OBJECTIVE 3**

Changes in Teaching Methodology for Human Resources Training.

**HYPOTHESIS:**

**H0:** There is no significant relationship between the number of teachers in the respective colleges and the development and training programs that are available to them.

**H1:** There is a significant relationship between the number of teachers in the respective colleges and the development and training programs that are available to them.

Many institutions find it hard to assign adequate funds for purchasing and maintaining computer systems, software, and other technology-related resources, which can restrict their ability to provide students with a state-of-the-art and efficient learning environment.

To overcome these challenges, academic institutions in Bangalore must prioritize the allocation of funds towards information technology infrastructure and ensure that they have the necessary technical support staff and faculty training programs in place. They must also invest in reliable internet connectivity and explore innovative ways to leverage technology for effective remote learning.

SOURCE: <https://assets.kpmg.com/content/dam/kpmg/in/pdf/2020/08/impact-of-national-education-policy-2020-and-opportunities-for-stakeholders.pdf>

For analysing the above objective, the following data was collected:

**TABLE 3: (SOURCE: AUTHOR’S COMPILATION)**

<b>COLLEGES</b>	<b>Total No. of Teachers</b>	<b>No. of Teachers who have undergone the training program online</b>	<b>No. of Professional faculty development programs provided</b>
Bangalore University	264	70	35
Christ University	1148	938	105
Kristu Jayanti College	309	243	45
BMSCE	384	218	22
MCC	293	264	12
New Horizon College	312	132	20

**3.1 MODEL SUMMARY**

<b>R</b>	<b>R SQUARE</b>	<b>ADJ. R SQUARE</b>	<b>STD. ERROR</b>	<b>R SQUARE CHANGE</b>	<b>F CHANGE</b>	<b>Df1</b>	<b>Df2</b>	<b>SIG. F CHANGE</b>
.983	.967	.945	80.428	.967	44.083	2	3	.006

Since the R value is greater than 0.4 and the R squared value is greater than 0.5 it means that the model shown above is satisfactory.

### 3.2 ANOVA

	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIFICANCE
Regression	570307.561	2	285153.781	44.083	.006
Residual	19407.772	3	6468.591		
TOTAL	589713.333	5			

The significance level is 0.039 which is lesser than 0.05, thus the null hypothesis is rejected. This means that there is a relationship between the training development programmers offered to the teachers in the respective colleges.

### 3.3 COEFFICIENTS

	B	STD.ERROR	BETA	T	SIGNIFICANCE
CONSTANT	97.663	53.690		1.819	.166
No. of Teachers who have undergone the training program online	.831	.258	.765	3.222	.048
No. of Professional faculty development programs provided	2.399	2.386	.238	1.001	.391

- Number of teachers who have undergone training programs online:  $0.048 < 0.05$ , thus there is a significant relationship between the number of teachers who have undergone training programs in the college.
- Number of professional development programs provided for faculty:  $0.391 > 0.05$ , thus there is no significance to the number of professional development programs provided for the faculty.

### 1.4 OBJECTIVE 4

Impact of the National Education Policy on the infrastructural of the selected academic institutions in Bengaluru.

The National Education Policy (NEP) 2020 seeks to revolutionize the education system in India through the introduction of several new policies and initiatives. A primary focus area is the enhancement of infrastructure in academic institutions, including schools, colleges, and universities. Academic institutions in Bangalore are grappling with multiple challenges in upgrading their IT infrastructure to comply with the NEP's requirements. Among the most significant challenges are the paucity of funds and resources to invest in new technology and infrastructure. Additionally, institutions may encounter difficulties in implementing and maintaining new technology due to a lack of trained personnel and expertise.

In conclusion, the NEP 2020 presents both challenges and opportunities for academic institutions in Bangalore with respect to their IT infrastructure. While implementing new policies may necessitate significant investments in technology and training, it also offers institutions an opportunity to enhance their infrastructure and improve the quality of education they impart.

SOURCE: <https://assets.kpmg.com/content/dam/kpmg/in/pdf/2020/08/impact-of-national-education-policy-2020-and-opportunities-for-stakeholders.pdf>



For analyzing the above objective, the following data was collected:

**TABLE 4: (SOURCE: AUTHOR’S COMPILATION)**

<b>COLLEGES</b>	<b>Total Expenditure (Rs. In Lakhs)</b>	<b>Expenditure on Maintenance of Academic Facilities (Rs. In Lakhs)</b>	<b>Expenditure on Maintenance of Physical Facilities (Rs. In Lakhs)</b>	<b>Total No. of students</b>	<b>Total No. of Teachers</b>
Bangalore University	2025.15	123	159.37	5929	264
Christ University	15578	1710	2836	23,821	1148
Kristu Jayanti College	1263.87	555.11	182.58	7691	309
BMSCE	432.78	814.65	3766.67	6932	384
MCC	53.025	210.191	1131.596	7962	293
New Horizon College	745	159	2638	5640	312

Since the R-value is greater than 0.4 and the R square is greater than 0.5, the model summary is satisfactory.

**4.1 MODEL SUMMARY**

<b>R</b>	<b>R SQUARE</b>	<b>ADJ. R SQUARE</b>	<b>STD. ERROR</b>	<b>R SQUARE CHANGE</b>	<b>F CHANGE</b>	<b>Df1</b>	<b>Df2</b>	<b>SIG. F CHANGE</b>
1.0	1.0	.998	311.944	1.00	628.717	4	1	.030

The significance level is 0.030 which is lesser than 0.05, thus the null hypothesis is rejected. This means that there is a relationship between the number of faculty and students available in the college and the expenditure on the infrastructure by the respective colleges.

**4.2 COEFFICIENTS**

	<b>B</b>	<b>STD.ERROR</b>	<b>BETA</b>	<b>T</b>	<b>SIGNIFICANCE</b>
CONSTANT	-4009.150	1165.340		-3.440	.180
Total Expenditure	-1.260	.264	-1.086	-4.7731	.131
Expenditure on Maintenance of Academic Facilities	-1.859	.835	-.167	-2.226	.269

Expenditure on Maintenance of Physical Facilities	-1.437	.190	-.310	-7.574	.084
---	--------	------	-------	--------	------

### 4.3 ANOVA

	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIFICANCE
Regression	244719484.40	4	61179871.099	628.717	.030
Residual	97309.102	1	97309.102		
TOTAL	244816793.50	5			

- Total expenditure excluding salaries on infrastructure:  $0.131 > 0.05$ , thus the total expenditure spent excluding salary shows no significance.
- Expenditure on maintenance of academic facility:  $0.269 > 0.05$ , thus showing no significance to the number of students available in the respective colleges.
- Expenditure on maintenance of physical facility:  $0.084 > 0.05$ , thus showing no significance to the number of students available in the respective colleges.
- Number of teachers:  $0.078 > 0.05$ , thus showing no significance to the number of students available in the respective colleges.

### FINDINGS

After the implementation of the National Education Policy in the Education sector of Bangalore, the following findings are interpreted:

- From the above analysis, it was found that the colleges have efficient access to technology. The rate of agreement on perceived usefulness, perceived ease of use, and acceptance of e-learning was (77.1%, 76.5%, and 80.9% respectively). The highest barriers to e-learning were insufficient/ unstable internet connectivity (40%), inadequate computer labs (36%), lack of computers/ laptops (32%), and technical problems (32%). Younger age, teaching experience of less than 10 years, and being a male are the most important indicators affecting e-learning acceptance.
- With the use of Information and Communication Technology, the majority of the colleges in Bangalore, along with E sources (journals and books), the student's academic performance has improved. It is clear from the study that instructors would need to concentrate on growing and expanding their skills and knowledge significantly to ensure the effective implementation of ICT integration in the classroom.
- Not every student enters college with the same amount of expertise in using technology and digital tools. As a result, learning outcomes may vary, with some students finding it difficult to keep up with assignments that call on technological expertise they do not possess.
- Lack of funding: The colleges in the Bangalore area have trouble obtaining enough money for IT infrastructure, including hardware, software, and networking tools. This may restrict their ability to offer professors and students the tools and resources they need for efficient teaching and learning.

- A lack of experience prevents the universities from designing and maintaining complicated IT infrastructure systems, such as campus-wide networks or cloud-based storage options. Issues with security, performance, and dependability may result from this. Bangalore's colleges frequently make use of old networking, servers, and computer hardware. This may result in subpar performance, a high rate of crashes, and trouble running contemporary software programs.
- Some institutions lack the internet bandwidth necessary to meet the demands of today's digital technologies and online learning platforms. This may result in sluggish or inconsistent internet connections, which may interfere with learning and restrict access to online resources. Clear norms and standards for IT infrastructure are lacking in Bangalore's institutions, which can result in inconsistent choices of hardware and software as well as challenges integrating various systems.

Findings of how academic institutions in Bengaluru are affected by infrastructure:

- Students are drawn to academic institutions in Bengaluru by offering them contemporary classrooms, well-equipped laboratories, and up-to-date libraries, among other infrastructure amenities. Institutions that make infrastructure investments are more likely to be viewed as desirable and excellent locations for higher education.
- Academic achievement and student satisfaction can be strongly impacted by the infrastructure facilities' accessibility and quality. Lack of resources or antiquated equipment ends up causing institutions to have trouble retaining students or to witness lower student performance.
- Research capacity: Academic institutions in Bengaluru show an improvement in their research capacity by utilizing modern infrastructure facilities. For instance, having modern research facilities with cutting-edge techniques and technology can increase faculty funding and research opportunities while also resulting in more significant research.
- Infrastructure facilities can also affect a college's capacity to obtain money from outside sources like government grants, business partnerships, and charitable organizations

## CONCLUSION

According to the conclusions of this study, the new National Education Policy (NEP) 2020 has had a considerable impact on the information technology (IT) infrastructure of Bangalore institutions. The policy-driven educational institutions embrace new and innovative teaching methods, necessitating the installation of new IT infrastructure. The growth of online learning platforms, virtual classrooms, and digital learning tools, as well as demands for contemporary labs and other facilities, have all contributed to this. The policy's promotion of research and development has also increased the pressure on institutions to give access to cutting-edge research facilities and technological advances.

However, the new policy's implementation has brought obstacles for institutions, including as financial and resource limits, as well as the need to train faculty and staff on new technology and teaching methods. The study's findings show that institutions must continue to adapt to these developments in order to remain competitive and provide students with high-quality education.

This study provides a starting point for future research on the impact of the new NEP on the IT infrastructure of colleges in Bangalore. Further research could explore the following areas:

While this study focused on the influence of the new policy on IT infrastructure, future research might investigate the impact of the policy on student learning outcomes such as academic achievement, career preparedness, and employability.

The efficacy of new teaching methods: The new NEP has fostered the use of new and creative teaching approaches like blended learning and gamification. Future research could look into how effective these teaching methods are at increasing student engagement and learning results.

The new policy's impact on faculty and staff: Faculty and staff have faced challenges as a result of the new policy's implementation, including the requirement for training on new technology and ways of teaching. Future research could look into the policy's impact on teachers and staff, such as their views about the new policy and their experiences applying new teaching methods.

## BIBLIOGRAPHY

1. [https://eng.bangaloreuniversity.ac.in/wp-content/uploads/2022/12/AQAR\\_2020-21\\_R.pdf](https://eng.bangaloreuniversity.ac.in/wp-content/uploads/2022/12/AQAR_2020-21_R.pdf)
2. <https://eng.bangaloreuniversity.ac.in/criterion-4-infrastructure-and-learning-resources/>
3. [https://christuniversity.in/uploads/userfiles/KAUNGN11463\\_Submitted.pdf](https://christuniversity.in/uploads/userfiles/KAUNGN11463_Submitted.pdf)
4. <https://mccbldr.edu.in/wp-content/uploads/2022/09/AQAR-2020-21.pdf>
5. <https://newhorizoncollegeofengineering.in/wp-content/uploads/2022/08/AQAR-2020-21.pdf>
6. <https://www.thehindu.com/news/national/karnataka/bangalore-university-modifies-courses-to-implement-nep-introduces-new-papers/article65694512.ece>
7. <https://www.timesnownews.com/education/article/bangalore-university-introduces-4-year-ba-bsc-hons-courses-in-line-with-nep-2020-st/824181>
8. <https://m.christuniversity.in/noteoncurriculum-and-credit-framework-for-undergraduate-programmes>
9. <https://kristujayanti.edu.in/admission/National-Education-Policy.php>
10. <https://bmsce.ac.in/home/news/1/implementation-plan-on-nep-2020-on-mygov-portal-seeking-suggestionsfeedbacks-date-extended-31102020>
11. <https://newhorizoncollegeofengineering.in/library-new/>
12. <https://newhorizoncollegeofengineering.in/wp-content/uploads/2022/08/AQAR-2020-21.pdf>
13. [https://bmsce.ac.in/assets/files/aqar/aqar\\_2020-21.pdf](https://bmsce.ac.in/assets/files/aqar/aqar_2020-21.pdf)
14. <https://mccbldr.edu.in/wp-content/uploads/2022/09/AQAR-2020-21.pdf>
15. [https://eng.bangaloreuniversity.ac.in/wp-content/uploads/2022/12/AQAR\\_2020-21\\_R.pdf](https://eng.bangaloreuniversity.ac.in/wp-content/uploads/2022/12/AQAR_2020-21_R.pdf)
16. [https://kristujayanti.edu.in/iqac/pdf/aqar\\_2020\\_21.pdf](https://kristujayanti.edu.in/iqac/pdf/aqar_2020_21.pdf)
17. [https://www.jainuniversity.ac.in/pdf/AQAR\\_20-21.pdf](https://www.jainuniversity.ac.in/pdf/AQAR_20-21.pdf)
18. [https://www.google.co.in/search?q=which+of+the+online+education+app+is+used+by+bmsce&client=safari&hl=en-in&sxsrf=APwXEdekJVw2abMe7jpwL7dlxfrn-2DgQA%3A1680848839623&ei=x7cvZKqzJdrw4-EPqPe06AU&oq=which+of+the+online+education+app+is+used+by+bmsce&gs\\_lcp=ChNtb2JpbGUtZ3dzLXdpei1zZXJwEAMyBwghEKABEAo6CggAEEcQ1gQQsAM6BAgjECc6BQghEKABOgQIIRAVSgQIQRgAULAMWL8sYLAuaAFwAHgAgAGUAYgBwBKSAQQw](https://www.google.co.in/search?q=which+of+the+online+education+app+is+used+by+bmsce&client=safari&hl=en-in&sxsrf=APwXEdekJVw2abMe7jpwL7dlxfrn-2DgQA%3A1680848839623&ei=x7cvZKqzJdrw4-EPqPe06AU&oq=which+of+the+online+education+app+is+used+by+bmsce&gs_lcp=ChNtb2JpbGUtZ3dzLXdpei1zZXJwEAMyBwghEKABEAo6CggAEEcQ1gQQsAM6BAgjECc6BQghEKABOgQIIRAVSgQIQRgAULAMWL8sYLAuaAFwAHgAgAGUAYgBwBKSAQQw)
19. [https://www.google.co.in/search?q=which+of+the+online+education+app+is+used+by+bmsce&client=safari&hl=en-in&sxsrf=APwXEdekJVw2abMe7jpwL7dlxfrn-2DgQA%3A1680848839623&ei=x7cvZKqzJdrw4-EPqPe06AU&oq=which+of+the+online+education+app+is+used+by+bmsce&gs\\_lcp=ChNtb2JpbGUtZ3dzLXdpei1zZXJwEAMyBwghEKABEAo6CggAEEcQ1gQQsAM6BAgjECc6BQghEKABOgQIIRAVSgQIQRgAULAMWL8sYLAuaAFwAHgAgAGUAYgBwBKSAQQw](https://www.google.co.in/search?q=which+of+the+online+education+app+is+used+by+bmsce&client=safari&hl=en-in&sxsrf=APwXEdekJVw2abMe7jpwL7dlxfrn-2DgQA%3A1680848839623&ei=x7cvZKqzJdrw4-EPqPe06AU&oq=which+of+the+online+education+app+is+used+by+bmsce&gs_lcp=ChNtb2JpbGUtZ3dzLXdpei1zZXJwEAMyBwghEKABEAo6CggAEEcQ1gQQsAM6BAgjECc6BQghEKABOgQIIRAVSgQIQRgAULAMWL8sYLAuaAFwAHgAgAGUAYgBwBKSAQQw)
20. [https://www.google.co.in/search?q=which+of+the+online+education+app+is+used+by+bmsce&client=safari&hl=en-in&sxsrf=APwXEdekJVw2abMe7jpwL7dlxfrn-2DgQA%3A1680848839623&ei=x7cvZKqzJdrw4-EPqPe06AU&oq=which+of+the+online+education+app+is+used+by+bmsce&gs\\_lcp=ChNtb2JpbGUtZ3dzLXdpei1zZXJwEAMyBwghEKABEAo6CggAEEcQ1gQQsAM6BAgjECc6BQghEKABOgQIIRAVSgQIQRgAULAMWL8sYLAuaAFwAHgAgAGUAYgBwBKSAQQw](https://www.google.co.in/search?q=which+of+the+online+education+app+is+used+by+bmsce&client=safari&hl=en-in&sxsrf=APwXEdekJVw2abMe7jpwL7dlxfrn-2DgQA%3A1680848839623&ei=x7cvZKqzJdrw4-EPqPe06AU&oq=which+of+the+online+education+app+is+used+by+bmsce&gs_lcp=ChNtb2JpbGUtZ3dzLXdpei1zZXJwEAMyBwghEKABEAo6CggAEEcQ1gQQsAM6BAgjECc6BQghEKABOgQIIRAVSgQIQRgAULAMWL8sYLAuaAFwAHgAgAGUAYgBwBKSAQQw)
21. <https://mccbldr.edu.in/library/>
22. <https://www.deccanherald.com/city/top-bengaluru-stories/bangalore-university-kicks-off-virtual-classes-for-undergraduate-postgraduate-students-821095.html>
23. <https://newhorizonindia.edu/btech-mtech-courses/>
24. <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0248758>