Digital Infrastructure: Changing the Educational Landscape in India

Prof. Lalitkumar R. Chopra[1] Prof. Shaileshkumar I. Makani[2] Pro. Minal Shah[3] Prof. Bijal Patel[4]

[1,2]Principal [3,4]Assistant Professor

[1]GrowMore Institute of Business Administration (BBA College), Himmatnagar, India [2,4]GrowMore BCA College, Himmatnagar, India [3]Shri BH Gandhi Self-Financed BBA College, Modasa, India

Abstract— In the human history as jotted by historian states that it is the human endeavor since last 3 millenniums to make human work life more earlier, faster and connected. Grey Revolution better known as Software Revolution that emerged in the late eighties is disruptive though slowly but steadily. Today India has positioned itself as an epicenter in the transformative digital technology field. Edutech and other digital technologies, has the breakthrough changes in academic field. The pace at which the digital technologies are evolving since last couple of years, has developed the new digital economy called as Data Economy which is impacting every sphere of academic life, be it student data processing, servicing the millions of students in admission to examinations, processing scholarships at one go, hybrid interactive education, to name a few. Starting from course structure to content development and the delivery of content in the classroom or via digital platforms, has taken a paradigm shift. NEP 2020 focus on wide variety of Government of India's push for Digital Transformation and building the Public Digital Infrastructure in academic field by various initiatives like MOOC, SWAYAM, NADA, STAR, NPTEL, IMPRINT, RUSA, etc are making big positive impact. This paper throws lights on the positive impact of Edutech Technologies in Gujarat, amongst MBA, BBA and BCA college students of North Gujarat in meeting their various academics needs. Our research data collected and hence processed shows that students liked the hybrid channel of education delivery i.e. mix of classroom and also the use of digital platform. Students and other stake holders too, consider digital edutech platforms has less negative impact on Mother Earth in the broad scenarios which helps in meeting the ESG imperatives (Environmental, Social and Governance) of SDGs of United Nation Organisation.

Key words: NEP 2020, ESG, SDGs, AR / VR, Digital Edutech Platforms and Transformation, Data Economy, NADA, ABC, MOOC, NPTEL, MS Excel

I. INTRODUCTION

Digital Technology has had a significant positive impact on education in recent years. With the proliferation of the internet with 4G and 5G networks with the widespread adoption of devices such as laptops, tablets, and smartphones, students, mentors and teachers now have access to a vital information and material resources that were previously very difficult to avail on time. One major benefit of edutech in education is the ability for students to access information and resources anytime, anywhere and with ease in the palm. With the internet access at their fingertips, students and mentors can now easily find the answers to their questions and also dive deep into knowing more with practical approach to the learning points. Students can complete project reports and assignments from the comfort of their own homes and hostels. This flexibility allows students to learn at their own pace and gives them the freedom to choose when and where they learn.

Another big positive impact of technology on education is the ability to personalize learning. With the use of adaptive learning software, teachers are able to create customized small or big extra lesson plans and assignments based on the individual needs and abilities of their students. This personalized approach to education can help students feel more engaged and motivated to learn, as they are able to focus on the topics and skills that are most relevant to their needs. We know that more freedom bring tech addictions to wrong resources and negative mentality or the procrastination attitude but overall impact is positive. More personalization in the long run can become the barrier in team building with positive mindset.

Technology has made it easier for faculty members to develop, collaborate and share pedagogical resources with their colleagues. Through the use of online platforms and social media, faculty members can easily connect with each other and share lesson plans, activities, and other academic materials. This collaboration helps teachers stay up-to-date on the latest teaching techniques and can also save them time and effort when it comes to creating their own lesson plans.

In addition to these benefits, technology has also made it possible for bright students to learn from a wider range of sources. With the internet and its various platforms like YouTube, LinkedIn, Blogs and Telegram, students can now access lectures, videos, and other very important educational materials from some of the world's top experts and institutions. This allows students to learn from a diverse range of perspectives and experiences, which can broaden their understanding and appreciation of different subjects.

EduTechs has made it easier for students with disabilities to participate in the classroom. With the use of assistive technologies such as text-to-speech software and electronic magnifiers, students with vision or hearing impairments can now easily access and participate in class discussions and activities. Overall, the positive impact of technology on education is undeniable. From increased flexibility and personalized learning to the ability to collaborate and access a wide range of resources, digital technology has transformed the way we learn and has opened up new possibilities for students and teachers alike.

Recent Times has made the whole world to ponder on the new development on Generative AI platforms technologies like Open AI's GPT-3.5 and similar platforms. This technology has made everyone in the academics to ponder on the changes the AI Based technology will bring in the academics. The materials in the form of essays or assignments are highly unique and free from plagiarism. This definitely arises questions on the leranability, critical and creative skills that a students and mentors need to develop in the long run.

Such technological advancements will need paradigm shift in the way academic community think and delivery the pedagogical contents in the colleges and schools. EduTechs in the near future will force to review the prioritization of current academics goals. Students with good handwriting will be the looser or the students with bad handwriting will the gainer in emerging digital tech era. Few skills that were essentially important can become redundant in a world where collaboration and communication are almost entirely tech driven.

In present days, MBA, BBA, MCA, BCA, BE / B.Tech, B.Pharm, etc colleges are the power house to meet the needs of the industry in terms of the man power, with different skill set as the industry needs tech drivers and not the old fashioned and old pattern employees.

The vital questions are, should we continue the system with a vast disconnected set of facts that can't meet the industry needs. Or we the academic systems as per the vision of NEP 2020 that focus to make job seekers more pragmatics and proactive in their skill sets which indeed brings more efficiency and effectiveness.

The Brookings Universal Centre for Education predicts that a substantial percentage of jobs that college education system today prepare will be redundant by the time they complete their formal college education. Our world has been steadily reorganizing from an industrial economy to a knowledge economy, but has the colleges responded to this change? How then should we best invest the precious and limited time that students have at colleges?

We should spend some time teaching foundational academics, but this can no longer be treated as an end in the learning journey at school and colleges. Instead, such knowledge and tech skills should be treated as a MEANS or tools that student are trained to utilize and apply towards developing competencies that actually matter for their success in the 21st century, which as per the Ministry of Education's Innovation Cell includes "creativity, innovation, empathy, problem solving, team work, strategic thinking, entrepreneurship as well as learning to accept failures as a part of one's development process". Developing the competitive mindset among the job seekers in India is must looking at the scale of population we have. Education system must open the mind set of students towards entrepreneurship too, as all STDs are not made for the jobs only.

EduTechs are not the only way forward in the overall development of the students in particular but for overall structured development of education environment. As per the broader guidelines of NEP 2020, we must have educational culture that brings in more adaptive learning mindset both in the classroom and industrial inputs. Keeping the goals of NEP 2020 in mind, most of the university level courses since last few years are having blend of classroom and industrial training to give students a right exposure that connects the classroom to companies and corporates. Instead of only teaching students to compete with VR / AR and AI, we should teach them to leverage the capabilities of AI and redirect their cognitive bandwidth more strategically towards the highest order thinking processes and creative problem solving that is only capable by the human mind.

Govt of India is focusing for the quality education is available to mass, so that students going to foreign can be decrease and there can be big saving in the Foreign exchange of the country.

The reason for third largest FOREX outflow (foreign exchange outflow) of India is of students education fees after the crude oil and gold import. Govt of India is concerned for this and is making educational policies such that foreign students comes to India, like we made big stride in Space science and electronics manufacturing in recent years.
Providing quality education will make India, a VISHVA GURU via Knowledge economy in true sense.

II. LITERATURE REVIEW:

A. Edutech Sector In India: A Research Report 2023 by Times Group

The use of the latest educational technology, or EduTech, in college and university setups has increased dramatically all over India in an effort to support teaching and learning and enhance student learning outcomes. More recent trends in the education system have been towards personalised, adaptive, and student-centered learning models, incorporating intelligent classrooms, digitised learning content and pre-recorded faculty videos enhancing the learning experience.

In India, EduTech has played an important role and contributed significantly to uplifting the standard of education over the last few years. The breakout of the Covid-19 pandemic has also initiated the growth of the EduTech industry in the country which was growing at a moderate pace and is expected to record an exponential growth in near future.

B. Factors Supporting EduTech Growth in India:

1) Affordable Online Education: Parents in India spend a lot of money on their children's education and additional skill learning. And, pursuing skill development offline is extremely costly. The EduTech players offer learning programs which are readily available without paying high administrative fees. As a result of this and cost optimization, students benefit from the savings, which increase the courses' affordability. According to KPMG research report on online education in India in 2021, online skill learning courses are 56% less expensive than offline classroom operated teaching options.
2) Availability of Quality Education: Technology can replicate the teaching material and videos, at almost no cost. Students can access high-quality education through online platforms and mobile applications. EduTech companies are not only helping brick and mortar legacy educational institutions not equipped with the latest digital infrastructure to bridge the gap to a considerable extent by supplementing with the resources to support the e-learning model, but also started competing

with them in content development and delivery. Not only this, online courses are more successful in keeping up to date with the latest technological developments. Latest courses are well created with the help of subject matter experts. It is predicted that the online education market in India is expected to grow by US$ 2.28 billion during 2021-2025, growing at a CAGR of almost 20%.

3) Lack of Educational Infrastructure and Qualified Faculty: The reach of educational institutions may be constrained by the growing population, but the expansion of the EduTech sector offers an alternative, such as intellectual infrastructures like libraries and qualified, well-trained faculty members, for a seamless experience to serve large number of students without the need for physical infrastructure. Mental infrastructure of experts, sitting at distant location can easily be availed to the benefits of large number of stds located in remote and rural locations.
4) Up skilling / Re skilling demand among working professionals and job seekers: Due to automation and fear of recession in the global economy, the Indian job market is straining under the dual pressure of layoffs and a lack of available jobs. Players in the EduTech industry are making it possible for professionals and job seekers to progress their careers and acquire new skills. The online skill courses by the EduTech companies are affordable; provide hands-on knowledge, which can be completed in a shorter time than an offline course, and offer flexibility in terms of personal schedule to upskill or reskill at their convenience.
5) Rise in the use of internet and smartphones: The adoption of smartphones and the internet has increased dramatically in India in recent years. Around 830 million people had internet access in 2021, and it is predicted by 2026, 1 billion people will be using smartphones in the country. For the younger age, and aspiring students coming from tier-3 cities and remote locations who have limited accessibility to such skill development courses, enrolling in distance education is incredibly accessible because of the internet. These groups could use smartphones and the internet in order to complete their educational obligations and learn career skills without leaving their homes, workplaces, or cities.
6) Digital-friendly Government Policies: The government by NEP 2020 has introduced a number of initiatives, including Digital India and Skill India, to promote digital literacy, build a society based on knowledge, and put into practice the three guiding principles of access, equity, and quality of education policy. Furthermore, 100% FDI through an automatic route is permitted in the Indian education sector by the government to allow entry of new EduTech players. Government has started allowing the foreign universities to open their campus in India. Australian University is coming up the Indian campus at GIFT City in Gandhinagar.
7) The Road Ahead: The rise of education technology, or EduTech, has made it possible to learn at anytime, anywhere. By embracing technologies like AR, VR, AI, ML, and IoT, EduTech institutions and companies are adapting their pedagogies for online teaching and providing these cutting-edge courses through the digital medium for a fraction of the cost.

The EduTech sector's potential to close the learning gap in the future appears to be quite promising given the trajectory of its expansion. Venture capital investments in India's EduTech sector have increased 32 times over the past 12 years, from 500 million in 2010 to 16.1 billion in 2022 and the sector is expected to reach US$ 30 billion by 2031.

C. Key higher education industry trends 2023:

1) FULL - FLEDGED ONLINE DEGREE PROGRAMMERS ACROSS THE COUNTRY

The University Grants Commission (UGC) approved full-fledged online degree programmes in 38 universities across India thereby providing students with a wide range of educational opportunities. Furthermore, the decision aligns with the goals of the National Educational Policy, NEP 2020, which focuses on online education. UGC is going to allow almost 900 autonomous colleges to offer online degree programmes in the near future.

2) BOOST IN ADMISSIONS AND ENROLLMENT

The 2022-2023 admission cycles witnessed higher enrollment of students in higher education institutions. The National Education Policy (NEP 2020) further aims to increase the Gross Enrolment Ratio (GER) to 50 per cent from current 27.1 % by 2035 in the higher education sector by restructuring the curriculum and pedagogy and reforming the assessments. Thus, ensuring a higher degree of participation in the institutions. This year's admissions went great, and we expect to see even more significant growth next year.

III. OBJECTIVES OF THE STUDY:

- To study the Digital Platforms adoption reasons among the MBA, BBA and BCA students of North Gujarat.
- To analyze the benefits of Digital / EduTechs Platforms.
- To know the importance of EduTechs in the growth of Colleges and Universities
- To study how much is the ESG concerns being met by Digital platforms.

IV. RESEARCH METHODOLOGY:

Research methodology refers to the systematic and scientific approach employed to collect, analyse and interpret data for the purpose of answering research questions or testing the hypothesis.

V. DATA COLLECTION METHOD:

In the research undertaken, Self-Structured Questionnaire is utilised to obtain the survey data from the sample of 100 each of MBA, BBA and BCA regular college students from North Gujarat using a simple random sampling method. Data collection

method used / utilized for this research was the primary data collection method. Data of students who are studying in second Year of MBA and II and III year of BBA and BCA were considered for the research analysis.

VI. RESEARCH TYPE:

The Qualitative Research methodology is used. Qualitative research involves numerical data to segregate the respondents in their selections of EduTechs platforms with respect to the level of satisfaction in service delivery.

A. Source of Data Collection:

1) Primary Data of 100 students each of MBA, BBA and BCA students collected by online questionnaire through Google form.

B. Constraints of the Research:

There are constraints in this research paper, as under:

1) The survey to collect the primary data of the MBA, BBA and BCA Students is conducted through Google form, due to time and resource constraints. Data reliability and data validity could have being compromised.
2) The students' data collected online cannot be concluded as evenly and logically distributed in North Gujarat. The chances of aggregation bias persist.
3) Online personal data submissions have the personal biases especially when it comes to learning, privacy matters, among many students.
4) Digital awareness on english medium digital platforms is quite less, poor understating of the research questions (in English) can lead to misinterpretations and hence the result can be compromised to some extent.

C. Data Analysis and Interpretation:

1) [A] Out of sample of 100 MBA students, 95 are using EduTechs Digital platform for study.
   Interpretation: This data shows that 95 % MBA STDs are using and well versed in the usage of EduTechs in meeting their academic needs. This means that EduTechs / Digital mode of learning is very high among MBA students. UGC's and hence the University / Colleges leverages for Digital India has bear the fruits along with the parents and students liking.
2) [B] Out of sample of 100 BBA students, 84 are using EduTechs Digital platform for study.
   Interpretation: This data shows that 84 % STDs are using EduTechs in meeting their academic needs. This means that EduTechs / Digital mode of learning is high among BBA students. Though Stds are 12th standard pass but have required resources to use the digital platforms.
3) [C] Out of sample of 100 BCA students, 90 are using EduTechs Digital platform for study.
   Interpretation: This data shows that 90 % STDs uses digital platforms, mostly mobile and Pcs in meeting their learning needs. This means that EduTechs / Digital mode of learning is very high among BCA students. Most of the BCA colleges are private / self-financed in North Gujarat and students are almost mentally prepared to use the digital devices in daily learning needs.
4) [A] MBA Students medium of study in College education: (among the 100 students):
   a) Gujarati Medium: 62 b) English Medium : 34 c) Hindi Medium: 04
   Interpretation: Data shows that though majority of students are from local language background, their interest to use digital platforms is quite high and they can easily use the technology for their academics needs. Maturity plays the positive role.
5) [B] BBA students' background in 12th Board education: (among the 100 students):
   a) Gujarati Medium: 68 b) English Medium : 26 c) Hindi Medium: 06
   Interpretation: Data shows that though majority of students are from local Gujarati language background, their interest to use digital platforms is high and they can use the digitechs. Data shows that language is not the major barrier in using the digitechs.
6) [C] BCA Students background in 12th Board education: (among the 100 students):
   a) Gujarati Medium: 60 b) English Medium : 34 c) Hindi Medium: 06
   Interpretation: Data shows that nearly two third students are from Gujarati language background, their interest to use digital platforms is quite high for their academics needs.
7) 3. [A] Satisfaction Level of MBAs using EduTechs Platforms: YES by 96 out of 100 (96 %)
   Interpretation: Figure shows that very high numbers of MBAs from North Gujarat are satisfied in using the EduTechs. We can make out that this is good sign, if all the stake holders of the academics enhance progressively and play pragmatic proactive role in putting the right regulations and ethical work culture in future.
8) [B] Satisfaction Level of BBA students in using EduTechs Platforms: 90 %
   Interpretation: Figure shows that very high numbers of BBA students from North Gujarat are satisfied in using the EduTechs. Though new to EduTechs, high number makes a point.
9) [C] Satisfaction Level of BCA students in using EduTechs: 96 %
   Interpretation: Figure shows that very high numbers of BCA students from North Gujarat are satisfied in using the EduTechs. Very high number is obvious. Students of BCA are aligned to ICT techs.
10) [A] MBA students Edutech Platform Usability (from Anywhere and Anytime): 93 %

Interpretation: Data shows that the MBA students would have good Mobile / PCs / Laptops, processing apps and internet network at their study and also at homes and hostels. Without good internet speed and reliable network, there is no EduTechs story at all. Data speaks that in Gujarat there is good data connectivity with 5G network speed too.

11) [B] BBA students Edutech Platform Usability (from anywhere and anytime): 86 %
Interpretation: Data shows that the BBA students have good Mobile / PCs, apps and internet network at their colleges and also at homes and hostels. Students coming from rural area might have issues.
12) [C] BCA students Edutech Platform Usability (from anywhere and anytime): 91 %
Interpretation: Data shows that the students have to good electronic devices / Laptops, mobile apps and internet network at their study and also at homes and hostels.
13) Top SEVEN Reasons for Edutech Platforms adoption stated by MBA / BBA / BCA students:
    a) Resource Saving in term of Travel, Paper and Time
    b) Availability of Quality Material developed by experts
    c) EduTechs helps in fast updation of materials and delivery
    d) Flexibility of Anytime and Anywhere learning and homework submissions
    e) Big savings in printed cost of Material
    f) Learning Resources available at the finger tip for reference.
    g) EduTechs merges the photos & videos in the learning process which leads to easy understanding

    Interpretation: All the stakeholders of academics are benefiting from the above benefits, which reduce cost of materials, are latest and instant, time saving and in digital mode. For tech savvy students, EduTechs can help reap extra benefits. In the long run, cost of good digital devices can be easily managed and use be optimized, compared to the benefits it delivers.
14) Do exams be taken on Google form platform?
    a) MBA: 81 % YES
    b) BBA: 79 % YES
    c) BCA: 86 % YES

    Interpretation: Responses shows that more than 80 % of the student's wants exams tobe conducted on digital platforms in online mode. We can make out that as most of the students are using digital gadgets in their daily life, they have natural preference to online exams. On the other side of exam i.e. evaluation and assessment can be managed at fraction of time and very low cost without bias and without prejudice. Human efforts in managing exams decreases to great level without compromising the quality and authenticity.
15) Fees Payment Mode used by Students:

1)	MBA students	a) Online 64 %	b) Cash 26 %	c) cheque 10 %
2)	BBA students	a) Online 52 %	b) Cash 40 %	c) cheque 8 %
3)	BCA students	a) Online 60 %	b) Cash 30 %	c) cheque 10 %

    Interpretation: Students' online fees payment is not high through online mode. We know that fees payment is mostly in hands of parents, and elder generation is still slow in adapting to online fund transfer.
16) Do Digital technology has positive impact on environment conservation?
    1) MBA: 81 % [B] BBA: 72 % [C] BCA: 80 %

    Interpretation: Good number of students consider that digital platforms are good for environment. We can say that Save Trees and Safe Paper campaign is bearing the fruit in the young generation.

VII. CONCLUSION:

Grey revolution is all pervasive and as students are becoming tech savvier day by day, Universities Depts and colleges has to be proactive and change the ways and means for delivering the latest and need based contents and other information's to stds at their convenience in the cost effective ways. Students are tech savvy from their school days so they easily adapt to the EduTechs platforms that are user friendly and cost effective.

Citizens in general and students in particular, adapt steadily to the changing demands and the environment that has integrity in process. From experience of last decade, EduTechs are scalable and cost effective. Meeting the growing needs of students and satisfying it with ready to use will bring charms on the faces of future generation of India i.e. our students. Hence the investment in the EduTechs platforms is going to be mandatory in days to come by all, small or big colleges and universities to meet the growing aspirations of learners. It seems that there is no looking back, as millions of students are moving towards EduTechs based learning in our highly populated country.

REFERENCES:

[1] https://www.ugc.org/nep2020
[2] https://hngu.ac.in/nep2020
[3] https://timesofindia/edutechs/nep2020
[4] https://gtu.ac.in
[5] https://ibef.org/nep2020
[6] https://digitalindia.gov.ac.in
[7] https://swayam.gov.in/

[8] http://nptel.ac.in/
[9] https://diksha.gov.in/
[10] https://www.eskillindia.org/
[11] https://ndl.iitkgp.ac.in/
[12] http://epathshala.nic.in.