

THE ASPECT OF MATHEMATICS IN DIGITAL INDIA CAMPAIGN AND IN INDIAN EDUCATION SYSTEM

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ABSTRACT

Since, the advent of digital media and technology around the world, educational methods and teacher-student interactions have evolved a lot. Today, the education sector is not only confined to classroom or coaching sessions but in fact, has successfully merged with the internet to become a better service industry. Digitalization and availability of high-speed audio-video connectivity and solutions have brought about a paradigm shift in the teaching-learning process. This paper examines 'The aspect of mathematics in digital India Campaign and Indian education system'.

Keywords: Digital India, Technology, Mathematics, E-learning, Video Lectures, Indian Economy and Development.

INTRODUCTION

Digital India is a campaign launched by the Government of India to ensure that government services are made available to citizens faster and in a more effective manner, eliminating bottlenecks that hinder implementation and creating delays and corruption. The way of performing services to the general public electronically by improving online infrastructure and increasing internet connectivity or digitally empowering the country in the field of technology. The initiative includes plans to connect rural areas with high-speed internet networks. Digital India has two main components: secure digital infrastructure and digital government services.

The Digital India program lays great emphasis on the policies of liberalization, i.e. faster licensing and facilitating and quick implementation of entrepreneurial innovations for the overall development of the nation. Along with liberalization, digitization gives strength to strong globalization and propels the nation towards economic growth and sustainable development. Strong privatization and entrepreneurship are fast emerging with a strong background. This digitization was launched by the Indian Prime Minister on 1 July 2015. It is both a supporter and beneficiary of other flagship schemes of the Government of India such as Bharat Net, Make in India, Startup India and Standup India, Industrial Corridors, Bharatmala, Sagarmala, Dedicated Freight Corridors (DFCs). By March 20, 2022, the population of India was 140 crore 36 lakh. Till 31 October 2021, 131.68 crore Aadhaar Digital Biometric Identity Cards have been issued. There are 502.2 million Smartphone users as of December 2019. There are 658 million internet users in India by January 2022. There has been an increase of 51 percent in e-commerce. By April 2017, the number of Internet subscribers in India had increased to 500 million. On 28 December 2015, Panchkula district of Haryana was awarded as the best and top performing district in the

state under the Digital India campaign. India is now adding around 10 million daily active internet users monthly, the highest rate of internet community addiction anywhere in the world.

ROLE IN EDUCATION SECTOR

According to the files 'World Bank National Account Data' and 'OECD National Account Data', the per capita GDP (current) in the year 2020 is US\$1927.708; Whereas in the year 2019 it was US\$ 2100.751. Although India is a low-income, highly populated, poor and developing nation, gradually, India is becoming digitally connected due to the efforts of the Center under its plan "Digital India". Many online education aggregators have also come up and are participating in this revolution to change the way we think about learning.

These online players focus on creating audio-video content with PPT, Excel etc. for students across the educational spectrum. They use animation and other tools with the help of professors, lecturers, teachers and experts to create educative videos which are education-oriented as well as entertaining. Not to mention, the presence of these aggregators is democratizing the educational scenario of the nation as the content they provide is available to all irrespective of affordability. And is not limited to any class of people. Students can browse through multiple providers to learn, understand and even revise concepts. In addition, online education aggregators provide space for greater interaction between students, unlike traditional classroom environments where learning is restricted to strict timings of 30 or 40 minutes.

These websites also give students the freedom to study at their own pace, and they can revisit concepts that they have doubts about. The aggregators also provide a wide variety of subject material, from languages to science, and from literature to math. This diversity of content is particularly attractive to people in colleges as well as those who are learning a new language as opposed to the traditional content available through their institutes and universities. Even for those who want to re-skill themselves or revisit a topic they learned ages ago, learning through video content has become easier for them as they are less Time consuming and more effective.

In this day and age, digital tools are the key to making learning more effective and fun. Video solutions have made education easy. Online education aggregators have made it easy for everyone to have access to a variety of content. He is proving to be a game changer in the field of education. It is trying to achieve higher growth and better social and financial equality.

ROLE OF MATHEMATICS

We believe that engineering is just a veneer but it is mathematics that gives it substance. Engineering is the implementation of mathematics and physics. Engineering is critically important as it leads to industrialization and without high level of industrialization Indian cannot move from category of 'underdeveloped' to 'developing' to 'developed' nation. It is the tertiary sector which has empowered any country to satiate with rapid economic growth, increase in national income, prosperity to meet the modern and technological needs of the people. It has been proved that countries with high income in tertiary sector are leading in economic power, health prospects, nuclear potential, education parameters and higher standard of living.

Mathematics and physics are everywhere around us to justify the vast number of events happening around us every fraction of a second. A number of mathematical and physical techniques are used to design and implement various digital platforms, systems and modules. eg. Sensors and Signals,

and their related systems are very important subjects which play a vital role in implementing the Digital India project. These topics thrive on calculus and trigonometry. In addition, they cover matrices and linear modeling. Really, they're all about math. There is tremendous math at work when we make a mobile call.

From channel modeling (curve fitting), GSM cell division strategies (differential equation), routing algorithms (linear programming), etc.

Furthermore, mathematics integrated with electronics, communications, and computer science can lead to the following important applications:

- (i) **Tools for personalized and adaptive learning:** Learning platforms, software, and digital devices combine to create countless new ways to transform education. In this way, the academic potential, strengths, weaknesses, aptitude and pace of learning of each individual student are catered for. Accurate, mobile and reliable applications are being built to teach students, help them practice their learning, take assignments and manage their schedules. Schools are now providing their students with digital devices such as desktop computers, laptops and tablets, and accessories required for online and digital education. These tools are aiding them in the teaching process, while also helping them understand how students learn and how to enhance their learning. The 'one size fits all' teaching model is being complemented by adaptive, personalized learning pedagogy. Going forward, this will be the new trend in formal education that will enable students to be technologically proficient and equipped for the modern workplace.
- (ii) **Two-way communication in e-learning:** In the traditional classroom seating scenario, students do not require individual attention due to time constraints. In contrast, the one-to-one context of learning in digital mediums currently allows students to learn through video and chat with an expert. The upcoming 'Learning Management System' will continue the two-way communication model between students and experts. More importantly, it will let students track their course progress, identify areas of improvement, and offer ways to make the most of them. With the help of 'Big Data', experts will be able to get student feedback within the framework of the material provided. Only with this, they will be able to improve and enhance their offerings in new ways to bring more benefits to the students.
- (iii) **Mobile based education:** In the last few years, people are adopting mobile learning which is slowly imbibing in their lives. It provides students access to a range of educational content on multiple digital devices such as desktops, laptops, tablets and smartphones. The smartphone user base continues to grow in India, both in urban and rural areas. In the coming years users will largely access most of their educational content via Internet-version smartphones. Most educational content, even including online courses, will be fully optimized for mobile devices.
- (iv) **Video Based Education:** Video learning has always attracted students as it secretly recognized the traditional classroom teaching style. Earlier in the class, students used to watch video lectures as homework and then discuss them during the next. Over time, this habit brought about a marked improvement in his performance, along with a noticeable improvement in grades. Video lectures allowed students to learn subject syllabi at their own pace and devote time directly to interaction in the classroom. This will continue to be a trend in the future where students will have access to legacy and authoritative content, which will be useful for both authorized training as well as performance enhancement. The growth in video-based education on mobile devices will eventually account for 80 percent of all Internet advertising by 2019.
- (v) **Educational Resources:** Open digital learning is commonly used in distance learning education. They freely contain Zionist media for the purposes of learning, learning and research. They are licensed to be freely maintained and disseminated by teachers among students. This allows Flex to access a wide array of study material that is otherwise restricted indigenously. Educational resources also facilitate the creation of an educational environment where teachers can adapt

educational materials for individual take-up or class recordings. This applies to specific curricular subjects such as science and the universe, as well as business and the fine arts.

- (vi) **Use of Virtual Reality (VR) and Augmented Reality (AR) for learning:** Virtual Reality and Augmented Reality are already popular in the technology space. Their advent in e-learning has massively affected the efficiency with which it is offered to students and the way in which it assesses their performance. VR allows students to interact with study materials directly allowing them to access e-learning platforms on mobile devices. It keeps their engagement level high and motivates them to learn more and better. On the other hand, AR facilitates teachers and coaches to perform tasks that they previously were unable or unable to do in a secure environment.

CONCLUSIONS

It is a firm belief that Mathematics is of utmost importance in Digital India and in the education sector. Mathematics integrated with electronics, communication and computer science can lead to important applications and they will create an environment for learning and improving knowledge and skills, which is unique, engaging and productive. Digital India has a major contribution in economic development and growth. Digital India has provided great viability and convenience to a large number of entrepreneurs in a wide variety of sectors across India for export, import and domestic businesses in technical as well as traditional sectors. Digital India is poised to be much wider in its use and impact in the future.

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