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# EXPANDING BOUNDARIES OF EDUCATION - FORMAL TO NON-FORMAL

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## ABSTRACT

*Use of technology has become a common practice in today's world. As the world is moving rapidly towards use of digital technology, the role of Information Technology (IT) in education has become increasingly important. This paper tries to focus upon two things Firstly; it exhibits the shift in imparting education from a traditional approach (formal education) towards modern approach (non-formal education) that uses technology. Secondly, it lists some of the factors that are acting as drivers or push factors for the non-formal education to grow in the future. The work has been analyzed using secondary data, and is therefore qualitative research based. Finally, the outcome drawn from the said paper exhibits that non-formal way of education will be an ongoing process and may provide newer areas and techniques to use as the technology advancement will take place in the future.*

**KEYWORDS:**

*Formal Education, Non-formal Education, Use of Technology, Technology Advancement, Technology Developments. Information Technology*

## DESCRIPTION OF RESEARCH PAPER (MAIN BODY)

### Objective:

The main objective of this paper is to understand the shift in imparting education from a traditional approach (formal education) towards modern approach (non-formal education) that uses technology.

### Methodology:

This paper is mainly based on secondary data. The articles which are published on or about digitalization or technology used in education have been collected for the study.

## INTRODUCTION [1] [2] [3] [4] [5] [6] [7] [8]

Non-formal education is the buzzword of today that makes use of digitization. In most commonly understood language Digitization is defined as 'a change of analog signals into digital signals'. Digitization can be used in the context of online learning, video lectures, e-books, etc., which may provide students with the experience of an interactive learning environment.

It may be observed that online learning has been used now days. In India it has started with the concept of distance learning or distance education by IGNOU. It is learnt that IGNOU has digitized 95% of its printed material and uploaded it for reading. Another organization NPTEL, which is a joint effort of the IIT's and IISC for promoting technology in imparting education has also come up for providing the further enhancements so as to strengthen the spread of digitized education. Thus the use of digitized techniques made the teaching methods of continuing education more diversified and beyond time and geographical boundaries.

Thus, with the emerging trend of digitization across the globe a new vision for learning practices is required to be evolved and adopted in Indian education landscape, such that a combination of technology and education is blended together to have novelty in imparting the education that arouses interest, quest for learning and recreational means from education making it enjoyable experience.

The modes of teaching in higher education have drastically changed in last 15 years. While some old guards still stay with the old "Chalk and Talk" method, it is very rare that in these days professors do not use some modern technology in classroom delivery.

Abundant information on any subject is available on various sources such as "YouTube", "Facebook", "Wikipedia" and "Google". The online education therefore has added new options of learning, has created a wide variety of new courses, content in diversified format and has increased the enrollment in many academic institutions.

This type of delivery has some substantial benefits and conveniences. It has no geographical or regional boundaries, so the internationalization of education has become a common phenomenon with satellite campuses mushrooming all over the world. New ways of learning and teaching may include development of new content or information and

communication technologies such as cable and satellite transmissions, audio and video conferencing, PC software and CD ROMs and in particular the Internet based sources.

This wide variety of means increases the accessibility to the rest of the world. This is achieved by promoting extensive use of a mixed learning model, wherein:

- Massive Open Online Courses (MOOCs)* are developed locally (in India) and are combined with those provided by the top global universities.
- Lectures delivered by local faculty are supplemented by pre-recorded lectures given by best-in-class faculty from the top institutions.
- Through the Massive Open Online Course (MOOC) platform, students from around the world would have seamless access to high-quality content generated by elite institutions, recorded lectures of renowned faculty, a dispersed and diverse peer group, and certification from reputed universities, global and Indian.

Some of the examples are:

- Two community colleges in Massachusetts have launched a mixed learning program utilizing in-class sessions and material from an existing MOOC offered through edX by MIT.
- The IITs are planning to offer basic IT courses in data structure, programming and algorithms through the MOOCs platform, for which credits would be awarded and counted towards degrees conferred to thousands of students across higher education institutions in India.
- Coursera – pioneer in offering MOOCs
  - Launched in 2012; partners with top universities and organizations in the world to offer massive open online courses (MOOCs) for free.
  - Offers 535 courses in a wide range of topics, spanning humanities, medicine, biology, social sciences, mathematics, business and computer science.
  - Has partnered with over 100 universities including the likes of Stanford University, Princeton University, the University of Michigan, and the University of Pennsylvania.
  - Have 4.3 million users currently, with Indians being the second biggest segment after Americans.
- Adoption of the MOOCs model by higher education institutions in India.
  - IIT Bombay – edX partnership: edX, an international provider of MOOCs, has partnered with IIT Bombay to make courses developed by the institutions available to students around the world.

With the growing use of technology in education a new way of imparting education has become popular. This is called as distance education. According to All India Survey of Higher Education 2016-17 distance education has become a useful mode of obtaining degrees for a large number of students who are staying in far off and remote areas and for whom accessing universities on regular basis is still a dream. Distance enrolment constitutes 11.45% of the total enrolment in higher education, of which 55% are female students. Level wise distribution of students under distance mode is shown in Exhibit 1. At all levels share of male students is higher than females except Certificate course.

**Exhibit 1: Gaining an Education – Level-wise Distribution of Distance Education Enrolment (In Nos.) [7] [8]**

| Level | Distance Enrollment | | |
|---|---|---|---|
| | Males | Female | Total |
| Post Graduate | 5,54,187 | 6,44,261 | 11,98,448 |
| Under Graduate | 15,50,244 | 11,06,381 | 26,56,625 |
| PG Diploma | 48,570 | 29,212 | 77,782 |
| Diploma | 62,548 | 36,568 | 99,116 |
| Certificate | 34,122 | 23,446 | 57,568 |
| Integrated | 187 | 55 | 242 |
| Total | **22,49,858** | **18,39,923** | **40,89,781** |

Looking at the State-wide variation, out of the total reported enrolled students pursuing studies through distance education; six states of India are providing education to around 62.6% of the students. These states are Maharashtra 17.1%, Delhi 15.4%, Tamil Nadu 12.2%, Andhra Pradesh 7.5%, Kerala 5.7%, and West Bengal 4.7%.

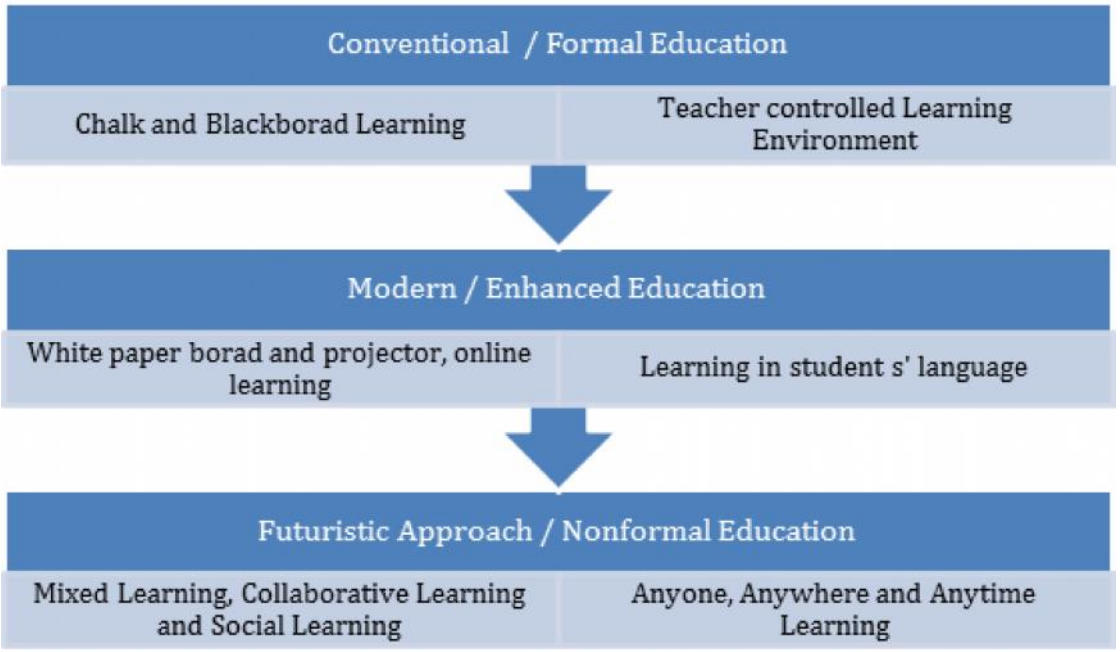
Distance Mode is mainly conducted by universities and majority of the students (57.6%) enrolled in Universities and their Constituent Units are studying under distance mode which can be seen from the Exhibit 2. At Post Graduate, Under Graduate, PG Diploma, Diploma, Certificate level share of distance enrolment in university is 61%, 60%, 57%, 37% and 57% respectively. Distance Enrollment at Integrated level is negligible.

**Exhibit 2: Gaining an Education - Comparison between Regular and Distance Enrolment in University (In Nos.) [7] [8]**

| Level | Regular Enrollment | Distance Enrollment |
|---|---|---|
| Ph. D. | 1,23,712 | 0 |
| M. Phil. | 25,035 | 0 |
| Post Graduate | 7,60,157 | 11,97,968 |
| Under Graduate | 17,56,975 | 26,56,564 |
| PG Diploma | 59,259 | 77,754 |
| Diploma | 1,56,479 | 90,750 |
| Certificate | 16,134 | 49,559 |
| Integrated | 1,01,696 | 242 |
| Total | **29,99,447** | **40,72,837** |

Thus, it may be proposed that there is a transition of education system that has taken place from conventional ways to futuristic approach that uses digital technology. The schematic showing generation education mechanism is presented in Exhibit 3.

**Exhibit 3: Shift in Education System – Formal to Non-formal**




## DRIVERS OF NON-FORMAL EDUCATION IN INDIA [9] [10] [11]

Today, India is one of the world's best destinations for education. With a portion of the best schools and colleges, it is well known for its excellence and high standards. What's significantly all the more fascinating is the manner by which innovation has progressed quickly to change the way students in India expends educational content. Also, the widespread availability and usage of smartphones is bringing quality to students across the geographies in India.

Here are some of the drivers that are pushing the growth of non-formal (digital) education:

### *One to One specific and Flexible Learning*

Availability of learning portals and web sites, related content and digital devices are together bringing in enormous options of transforming the education. Along these lines, the academic potential, strengths, weaknesses, aptitude and learning pace of every single student is taken into account. Systematically designed contents matching specific student needs are being developed to impart learning to students. This in turn helps them practice their study, enable them to rehearse their learning, take assignments and deal with their timetables.

Now-a-days students are getting access to wide range of gadgets (such as desktop computers, laptops and tablets and so on) through their schools and colleges. These gadgets are supporting them in the learning process while additionally helping them see how students learn and how to augment their learning activity.

### *Bi-Directional Talk in E- Learning*

In the conventional classroom seating situation, students can't get the individual consideration they require because of time limitations. In contrast, with the personalized kind of learning possible using digital devices, now students can learn through videos and interact with an expert.

The upcoming 'Learning Management System' will continue the bi-directional interaction between students and experts. All the more essentially, it will give students a chance to track their coursework progress, identify areas to improve, and offer approaches to take advantage of them.

### *Mobile assisted Learning*

Over the past few years, mobile assisted learning has gathered momentum and gained popularity by people who have steadily absorbed it in their lives. It has offered students the adaptability to get educational content flawlessly over

different advanced gadgets such as desktops, PCs, tablets and mobile devices.

The cell phone user base in India continues to increase, in both urban and rural areas. The coming years will witness users accessing most of their educational content through internet powered smartphones significantly. Due to increasing usage of smartphones, now most of the educational content, including even online courses, will be enhanced completely for mobile devices.

| **Mobile based Learning – BYJU in India [15]** | |
|---|---|
| BYJU'S The Learning App | Mobile learning in Asia and particularly in India is on the rise, thanks to high smartphone penetration rates. The mobile learning startup, BYJU is a learning app for Indian schoolchildren. BYJU's mission is to battle the "one-size fits all" approach due to unfavorable teacher-student ratios and to also facilitate a mindset shift in India's schools. Students should be driven by their love of learning and not the fear of an impending exam.<br><br>BYJU creates a personalized, visual learning experience for students via mobile app which includes watch-and-learn videos, rich animations and interactive simulations developed by their in-house content team. |

| **Mobile based Learning – Khan Academy in India [16]** | |
|---|---|
| Khan Academy<br>Khan Academy Education | About Khan Academy<br>Khan Academy offers practice exercises, instructional videos, and a personalized learning dashboard that empower learners to study at their own pace in and outside of the classroom. Subjects covered are mathematics, science, computer programming, history, art history, economics, and more. |

## Video assisted Learning

Video assisted learning has dependably engaged students since it intently reflects the conventional classroom educating style. Prior, students watched video lectures as a form of homework and afterward examined them amid the following class. After some time, this propensity achieved a noteworthy change in their performance, with an observable change in grades.

Video lecture facilitates learning by the students at its own. Students can learn subject syllabi according to their convenience without disturbing the classroom based interactions. This trend will be continued in near future where students will have access to quality and intuitive content. This content will be helpful not only in performance improvement but also in formal preparation.

## Open Education Resources

Open education resources (those using digital technology) are most commonly utilized used in distance learning courses. They consist of freely accessible media for learning, academic and research purposes. They are licensed to be revised and disseminated freely by teachers among students. This allows the latter to gain access to an extensive array of study material that is otherwise restricted indigenously.

Open educational resources encourage formation of an adaptable environment where instructors can modify the educational content for singular sessions or classroom sittings. This may be applicable for standard curricular subjects such as mathematics, sciences and languages, as well as business and fine arts.

## Cloud based Technology in Education

Enhanced IT abilities and undertaking framework at schools are expected to make an effective advanced learning background. While the technology exists in some forms, the real challenge comes in terms of scalability. The biggest advantage of cloud technologies is that they create a centralized repository of knowledge for students and teachers to access. This is taking the student-teacher relationship beyond conventional classroom session.

Cloud-based technology in education has become such a phenomenon since it ensures sustained academic learning irrespective of the student's geographical positioning. Moreover, it ensures that the desired data is centrally available for processing and deriving deeper insights for a more effective learning experience.

Cloud-based technology also enables educators to boost their reach without making any significant infrastructural spends. This, in turn, benefits end-users by reducing the cost of services, while simultaneously adding value to their education.

An example of news item regarding online teaching is shown in Exhibit 4.

**Exhibit 4: Online Teaching preferred by Students [14]**

| **Tutors personalize classrooms for pupils as teaching goes online** |
|---|
| Online or virtual tutors are now the buzzwords amongst parents and students with an increase in the demand for online learning along with the wide range of start-ups in the field of digital learning.<br><br>**The Benefits:**<br>• Online tutoring enables teachers to use different methods and personalize their lectures to cater the specific need of every student.<br>• Adaptive learning techniques help provides different combination of practice questions to cater to the aptitude of each student.<br>• Educators are able to identify quick graspers or slow learners and teach according to the learning speed of the student.<br>• Online tutors, with an experience of 3 to 4 years, can earn upwards Rs. 1 lakh per month. |

## SPECIALIZED COURSES IN NON-FORMAL EDUCATION [12] [13]

As stated earlier the increasing impact of technology has resulted in non-formal education. It is evident that this is helpful in reaching it to all. This will give rise to newer areas of learning with emphasis on more specialized course content.

Traditional courses will be soon replaced by more specific knowledge oriented courses. Some of the examples of such courses are as shown in Exhibit 5.

**Exhibit 5: Some Specialized Courses**

| **SPECIALIZATION MATTERS** | |
|---|---|
| In the Spotlight | |
| Agriculture Business | Innovation and Entrepreneurship |
| Energy and Environment | Hospital and Health Care Management |
| Telecom Management | Infrastructure Management |

| **OTHER POPULAR OPTIONS** |
|---|
| MBA in Sports Management: The course provides specific skills pertaining to expertise in software and communication. Students get access to sports industry through internships or project-based work opportunities. Students' skills are tested throughout the academic calendar. |
| Masters in Sports Science: The postgraduate programme focuses on allied sports sciences, sports rehabilitation, performance enhancement, sports nutrition and doping. Specifically the course deals with subjects as varies as exercise physiology, therapies, to deal with injuries, and sports ergonomics. |
| *Source: Institute of Sports Science and Technology, Pune* |

This is also echoed by students and institutes as shown in Exhibit 6.

**Exhibit 6: Views of Students and Institutions**

| **VOICES** |
|---|
| Construction Management Student, MIT World Peace University: We are moving towards an infrastructure-positive environment with visibly increased government initiatives for development. I was in search of a future-oriented course that is focused on these changes. During my research I came across the Construction Management program. It is quite interesting to learn the facets of construction, design and project management. |
| Head of Department, Agribusiness Management, Symbiosis institute of International Business: Every year sees an increase in the number and diversification in the peer group (students, domains and organizations) in agribusiness. We have students from different domains in allied fields like Biotechnology, Food Technology, Geology and Agriculture. Companies like Bayer, Olam, Sathguru Microfinance, Raw Pressery, are few of the major players that come to our campus. |

The authorities have a role here too. They may think of having certain approaches and policies that will help support the non-formal (online) education. Quick implementation, enhanced digital infrastructure and its quality supported with reasonably priced broadband services across the country will help encourage the utilization of inventive and innovative educational tools.

The increasing influence of technology in education is, thus, offering us a glimpse into a gradually evolving realm of unconstrained learning. Today, if we are able to deliver despite an outmoded education system, imagine what wonders the next generation will accomplish, once it has been trained with advanced pedagogical methods. And since these systems are witnessing increased adoption with every passing year, we won't have to wait much longer to see the results.

## EXPECTATIONS FROM NON-FORMAL EDUCATION [10] [11] [14]

To conclude let us have a glance at the expectations or yet to come attractions of this non-formal education.

The ongoing advancement of non-formal education is nothing short of a revolution. The world has seen educational efficacy changing digitally with each passing day. It has not just given instructors and students boundless educating and learning openings, individually, but additionally enhanced students' knowledge, cooperation in the learning procedure and development.

The following are some of the forthcoming expectations that show the advancement of non-formal education:

### *Social Media as tool for Learning*

Social media has advanced progressed from being a simple networking means to a learning tool. Today, numerous instructors and colleges consolidate internet based life into their educational programs, making it a basic piece of the e-learning background. Aside from having the capacity to share data anyplace, whenever, this pertinent instrument is likewise a responsive method for keeping students connected with and intrigued. They are much mindful of current issues, trending issues, social activities and upcoming career opportunities, consistently.

### *Going into the Hinterland*

Nearer or local markets such as rural markets are developing and growing faster than the established ones. Availability and affordability of high-speed internet and direct-to-device advancements are empowering rural students to get quality resources and education, anywhere and anytime. These have also empowered them to spare time and money.

### *Acceptance and Growth of Interactive Learning*

Digital education is never again kept to a classroom. With the appearance of virtual classroom, terms like flipped classroom, collaborative learning, formative assessment and mobile learning have become popular. The learning process over the years has been made more attractive, fun filled and engaging through these models. Different educators have thought of interactive learning modules that exhibit a decent harmony between proactive recreations that entertain and those that impart educational qualities and values.

### *Gaining from the Best*

Global discussions, universally trained instructors, premium courses and reputed institutes have embraced change and development. Sitting in the solace of one's home, one can approach the best authors, researchers and specialists. This has upgraded learning and brought about a rich teaching culture. In fact, about three fourth of the institutions offering online learning say it is crucial to their long-term strategy.

## CONCLUSION [10] [11] [12] [13]

To sum up the things, it may be possible to have a convergence of digital and physical universes resulting in non-formal education supported by easy availability and accessibility of the web. The industry is never again divided; there are players as of now who are putting forth a suite of courses to cater to the changing and dynamic needs of accessible students.

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