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An Analysis upon Enhancement of Online Education in India: E-Learning Revolution

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Abstract – Internet and Communication Technologies are transforming education, taking it out of the traditional classroom and making it open, affordable and dynamic. Universities, publishers, corporate and individual lecturers are creating online courses. A course consists of video lectures, electronic study notes, online tests and assignments. Anyone who wishes to learn may enroll in these courses, take the lessons, complete the tests and assignments, and receive a certificate upon successful completion of the course. These Massive Open Online Courses (MOOCs) are making world class higher education available to all those who wish to learn, regardless of age, location or educational background. Education faces a number of challenges worldwide. Over 366 million youth are unenrolled in colleges. College education is growing more expensive. Many institutions face shortage of qualified faculty members, funding and infrastructure. Education over the internet can address many of these issues.

Online classes are scaleable – a class of 50 can be expanded to teach 50,000. Teaching and learning over the internet can be done at a fraction of the cost of traditional classroom teaching. Flexibility, mobility, use of multimedia technologies, constant syllabus revision, collaboration and interactive discussions give online education an advantage. This is still an evolving field. New partnerships, innovations and technological advances are revolutionizing teaching and learning, and clearly, online education is an integral part of the future of education.

India presents one of the largest education systems in the world showing an extensive network of more than 1 million schools and higher education organizations. As per some surveys, more than half of the country's population falls in the target market for education and allied services. There are many institutions competing with each other to provide e-learning technologies in India. They have roped in many technological developments to felicitate their distance education branch. Many new entrants have been noticed in the market providing students with an opportunity to widen their horizons of knowledge and offer a wide array of Distance Learning Courses in India. Thus in this paper we have tried to come with the comparison of online education system & compared to traditional classroom learning and in relation to individual student needs, perceptions, and learning outcomes in Indian environment.

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INTRODUCTION

Now days there are many institutions competing with each other to provide e-learning technologies in India. They have entered in online education with the vision of providing good knowledge and to have a track of continuous evaluation overall development of the students. The system roped in many technological developments to felicitate their education. Many new entrants have been noticed in the market providing students with an opportunity to widen their horizons of knowledge and offer a wide array of Learning Courses in India like Merit Nation ,Gyan ganga , etc.

Infrastructure and regulation issues might seem to be slowing down the otherwise expanding education space in the country but this sector is already showing promise of an immense growth. The market is expected to grow leaps and bounds in upcoming years widening the areas of opportunities. It is predicted to grow $40 billion by 2017. There are many factors affecting its leverage. The online education providers should emphasize more on the education angle than the technology angle. This is the time where students may be tech savvy but they need relevant, precise and to the point high quality content that can be consumed online in a convenient manner. It is all about providing high quality content to the right person in the right manner. The impact of learning environments in relation to learning outcomes has constantly been explored by researchers of education. For example, Ramsden and Entwistle (1981) empirically identified a relationship between approaches to learning and perceived characteristics of the academic environment. Haertela, Walberg, and Haertela (1981)

found correlations between student perceptions of social psychological environments of their classes and learning outcomes. Web-based technology has noticeably transformed the learning and teaching environment. Proponents of online learning have seen that it can be effective in potentially eliminating barriers while providing increased convenience, flexibility, currency of material, customized learning, and feedback over a traditional face-to-face experience (Hackbarth, 1996; Harasim, 1990; Kiser, 1999; Matthews, 1999; Swan et al., 2000). Opponents, however, are concerned that students in an online environment may feel isolated (Brown, 1996), confused, and frustrated (Hara & Kling, 2000) and that student's interest in the subject and learning effectiveness may be reduced (R. Maki, W. Maki, Patterson, & Whittaker, 2000). The development of these new trends emerging in the contemporary education system raises a question about the effectiveness of online courses, particularly as compared to traditional classroom learning and in relation to individual student needs, perceptions, and learning outcomes.

A much quoted and requoted quip about education is that it has not changed much since the middle ages. If a physician from the 12th century were to enter an operation theatre in a hospital today, he would faint. Whereas a teacher from the same period could enter a classroom and feel quite at home. But this joke is becoming more and more obsolete every day. The past two years have seen such a phenomenal transformation in the nature of education that even a teacher from an earlier decade would feel the change. Technology that has penetrated every aspect of our life has altered teaching and learning. Internet and Communication Technology (ICT) has rewritten the rules. The university is no longer the sole repository of scholarship. The class is not enclosed within the walls of the classroom anymore. Knowledge is not contained in a textbook. Imparting it is not the domain of the teacher. The degree is not the sole proof of learning. Education, as we have known it, is on the cusp of a profound change. Gutenberg's printing press made books easier to print, and what had been handwritten, rare, precious and so tied to library shelves was freed of the chains. The computer and internet gave us the 'soft copy' that freed information from all physical media. ICT is virtually opening up education to the whole world.

E-Learning is a boomerang around the world. It has just evolved in India. Government and corporations see it as an essence of business strategy, and the students have gone mad for the courseware and the flexibility of the system. With the introduction of internet technologies in 1995(India), the information can be readily communicated to any part of the country, overcoming the geographical limitations. This has led to better integration of systems employed in government organizations, corporations and other business institutes. The exchange of ideas, expertise and collaboration can take place almost anytime and anywhere.

E-Learning concepts, tools, models and methodologies can be readily deployed for interactive education, commercial and business purposes. It can be said that e-learning is riding on the shoulders of the giant (the Internet). This will enable us to achieve the objectives and to bring about the all-round development.

It is true that the population receiving education in the country is growing exponentially, and this is the major cause for exploring cost effective and qualitative alternatives. Therefore, an overview of the current state of e-learning programs and systems would be beneficial to many capitalists exploring the opportunities for a profitable venture.

INDIAN EDUCATION SYSTEM

In India, the education processes are primarily class room lectures, presentations and laboratory experiments. These are supplemented with audio-visual aids like the use of projectors, stereo systems and the projection of films. Students are required to listen to understand. They find it less comfortable to interact due to their perceptions of the atmosphere and the circumstances leading to the unsatisfied learning experience. However, this is not true in all cases. Many find it a better option to have face-to-face interaction during the learning process. This has an implication on the size of lectures and the tutor-student ratio.

Looking into such intricacies of the learning processes, many organizations like ICAI, ICSI, ICWAI, ICFAI and others have developed the successful distance learning course wares and modules to overcome the deficiencies present in the traditional educational model.

- Institute of Chartered Accountants of India (ICAI).
- Institute of Company Secretaries of India (ICSI).
- Institute of Cost and Works Accountants of India (ICWAI).
- Institute of Charted Financial Analysts of India.

These are the Institutes of repute imparting education towards professional streams like Accounting, Company Secretary, Cost Accounting Analysis, etc., in a self-learning modular approach. Students are required to study the modules dispatched to them periodically and can send the assignments by post for their evaluation. Students facing problems in the concepts and theories can attend the special problem solving classroom sessions held periodically on the regional headquarters all over the country. Also, they can register for the examinations according to their suitability in the prevailing slots.

These organizations have been successful in the operation of this modular distance-learning model since their inception. The success of these Institutes can be attributed to the fact that being a distance-education society, they provide the latest industry oriented curriculum and syllable, fair and robust evaluation systems and the management and administration by professionals of the same field. This has led to greater acceptance and recognition of their courses than other regular degree programs. (Comparison is with Bachelor and Masters Programs in Commerce, Basic Sciences, and Arts).

Also, there is the presence of universities like IGNOU (Indira Gandhi National Open University, New Delhi) which is imparting education in the same mode as discussed above for almost 22 years to almost every field— Accounts, Science, Arts, Humanities, Management, Computer Education and the like. In light of the above facts it can be said that the distance education used in conjunction with the traditional model are not new and can easily be integrated with the emerging technology.

VALUE OF EDUCATION

Education is directly or indirectly connected to every global challenge we face. Statistics from every continent show that the higher the level of education, the lower the rate of unemployment. Even in countries where unemployment levels are high, the unemployment rate of those with a degree is less than unemployment rate of those without a college education.

Higher educational attainment also correlates with higher earnings. Perhaps with the exception of Bill Gates, Steve Jobs, Mark Zuckerberg and a few others, college education is essential for a rewarding career.

That makes education an insurance against poverty. Illiteracy, unemployment and poverty form the hotbed of extremism, and education that tackles each of these issues is a safeguard against violence at all levels, domestic to international. Better educated people are better equipped to overcome the frictions of globalization and cultural differences. Historically, education and democracy have been inextricably linked. No country with very low levels of education has been democratic over the long term, and almost every country with a high level of education has remained a stable democracy.

Life expectancy is found to be strongly associated with education. Data shows that among 15 OECD countries, a man with tertiary education lives 8 years longer than one without a degree or diploma. According to a 2012 UNESCO report, each extra year of a girl's schooling reduces her fertility rate by 10%. At the same time, the probability of infant mortality reduces by 5% to 10%. The children of more educated people are better immunized and twice as likely to survive beyond age 5. Education also turns out to be the first vaccine against disease. Those with higher levels of education are more likely to report stronger civic engagement. They take action to address ecological and social issues. Education plays a key role in our attempt to evolve a new global paradigm to meet today's challenges.

THE ONLINE REVOLUTION

The challenges facing education are numerous and varied. There have been attempts, some successful, made to address them in the past. But what makes this period momentous is that technology makes it possible to break into another space and time, taking education to a whole new plane.

When we order a book online from Amazon or one of the many similar online stores, we hardly wonder at the act. But when Jeff Bezos started Amazon.com 18 years ago, Barnes and Noble, the Borders Group and other large bookstore chains dominated the market, and the idea of a website competing with the giants was a new, even irrational one. But the startup not only overtook everyone else in the domestic market, but soon began selling to the whole world. The user friendliness of the site, the wide range of products, discounts, user reviews, wish lists, targeted advertising and the convenience of shopping from home made the whole idea a perfect success, and setting up an online store seems the most obvious thing to have done then.

The idea of online education is similar. Just as Amazon took the experience of shopping out of the brick and mortar store and made it available on the internet, enhanced the process and continues to do so in a hundred ways, it is possible to do the same with education. Both traditional universities and a range of startups are experimenting with new models that challenge centuries of convention. In another 18 years from now, online education will seem to be the most obvious thing to have done at this time. Today when one mentions major booksellers, the name of Amazon comes first to mind. In education, it is Harvard, Cambridge, MIT and the like. What will it be 18 years from now?

What is online education? The terms virtual education, e-learning, web-based training, computer-aided instruction and digital education are all references to the use of electronic media and ICT in education. In other words, it is what we have been doing since the 1960s.

In 1960, the University of Illinois linked computer terminals in a classroom to allow students to access informational resources on a particular course while

listening to recorded lectures. Today, when we read an online book or newspaper, a newsletter or even a mail message, we are engaged in online education. Participating in a discussion, reading a blog, visiting a website, watching a video, referring to an online dictionary or encyclopedia, even social networking are learning experiences, and come under the same definition.

If online education has been around for over half a century, why is everyone suddenly talking about it so much now? Since 2004, enrollment in online learning has recorded a growth of 2% per year. Almost 25% of all students in post-secondary education in the US were taking online courses in 2008. In 2009, it had risen to 44%. This figure is projected to rise to 81% by 2014. From being a marginal, experimental idea, online education is gaining mainstream acceptance. From renowned universities to educational startups, from publishing houses to software companies, everyone has realized the potential of online education to democratize and revolutionize global education.

METHODOLOGY

The study compares learning effectiveness of six factors out of which three are for online teaching and other three for face-to-face teaching . The study is done on the students of B.Tech (CSE , IT, ECE, CE) for teaching one theory subject and one practical subject thru both online and face to face method and then at the end of semester and the feedback form was distributed to them to get the required data. This research discovered two hypotheses:

H0: There is no significant difference in learning effectiveness between online and face-to-face classes.

H1: Online class differs from face-to-face class in learning effectiveness.

		Online			Classroom		
Grade	Value	odd semester (N=28)	odd semester (N=30)	odd semester (N=29)	even semester (N=28)	even semester (N=30)	even semester (N=29)
A+	10	6	5	6	4	4	5
A	9	8	8	9	6	7	9
B+	8	6	7	7	6	6	5
B	7	2	4	2	2	4	2
C+	6	4	4	4	4	4	4
C	5	1	1	1	1	1	1
D	4	1	1	0	1	1	1
E	2	0	0	0	1	1	0
F	0	1	0	0	3	2	2

Table 1 : Data Statistics

Paired T-Test -

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	online study gp1	3.22	9	2.863	.954
	face to face study1	3.11	9	1.833	.611
Pair 2	online study gp2	3.33	9	3.000	1.000
	face to face study2	3.56	9	2.351	.784
Pair 3	online study gp3	3.22	9	3.420	1.140
	face to face study 3	3.22	9	2.333	.778

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	online study gp1 & face to face study1	9	.924	.000
Pair 2	online study gp2 & face to face study2	9	.945	.000
Pair 3	online study gp3 & face to face study 3	9	.949	.000

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	online study gp1 - face to face study1	.111	1.364	.455	-.938	1.160	.244	8	.813
Pair 2	online study gp2 - face to face study2	-.222	1.093	.364	-1.062	.618	-.610	8	.559
Pair 3	online study gp3 - face to face study 3	.000	1.414	.471	-1.087	1.087	.000	8	1.000

Inference -

The correlation between three of the pairs is very high i.e .924 , .945 and .949 which is of very high order. To be significant at 0.05 level the value of T for df =8 must be 2.31 and the obtained value for 3 of the pairs is .244 , -.610 & 0 which are very less than the tabulated value thus Null Hypothesis is not accepted.

CONCLUSION

Emerging technologies and approaches in online education enable all instructors to practice what the very best teachers have always known: that students are enabled or limited by their prior knowledge and that the fine art of teaching involves discovering the multiple pathways that will move students from where they are to the desired learning outcomes. If a student comes to the course knowing a great deal already, the online instructor will be able to assist that student to accelerate the time to completion in a course. If another student needs more help and time to acquire needed prior knowledge and skills, the instructor can augment the student's learning to fill in some of the basic knowledge required before moving forward. While these features could, of course, be integrated in an online course designed by an individual instructor, the truth is that most faculty simply do not have the time, resources, or expertise to recreate what can be integrated far more simply into course management systems for online education.

With all the challenges that India is facing in education and training, E-Learning provides many answers and needs to be addressed seriously by the planners, developers and the private industry players. In the knowledge economy, the chief competitive advantage of nations is not their physical assets, be it land, natural resources or even oil, but quality and skill of their people. If used effectively, e-learning can reach education to a large constituency that would otherwise not have access to it. In India, education is nothing short of economic liberation for millions.

As described above, the revolution of e- learning has begun and is at an infant stage and needs to be nurtured further. We have to work hard to develop robust and flexible modules to explore the opportunities to greater heights.

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