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INTEGRATED TEACHING AND LEARNING

Praveen Kumar Murigeppa Jigajinni[1]
Sainik School Amaravathinagar
Post: Amaravathinagar,
Udumalpet Taluka,
Tiruppur Dt,
Tamilnadu State

ABSTRACT

ICT acts as a core component in edification without which teaching and learning is impossible. If and only if edification of the entire subjects/entire curriculum is conducted through technology then this process of edification is called as "Integrated Teaching and Learning". Further it is the base for the entire curriculum.

If we look back, in India, English was playing key role and was a base for learning all the subjects/curriculum, time has changed and current trend is that, ICT is the base for learning the entire subject/curriculum. The one who doesn't know how to use ICT & integrate it in curriculum definitely will miss the train and he/she will be cornered. Further it is a yardstick for measuring development of a nation in the 21st century.

Information communication technology is the basket of all the electronic gizmos used in communication. Further Integrated teaching and learning creates hyper loop between acquired knowledge and applying acquired knowledge in real life.

The very purpose of this paper is; Injecting the technology in edification further to study the impression of the technology by comparing with the traditional methodology of teaching and producing skilled and semiskilled professionals to contest at global level and facilitating other aspects of life.

The post effect of integrated teaching has resulted better understanding of the subject and is a boon to education. All the educational institutes/schools must integrate and make use of the cutting edge of technology. Further by integrating ICT one can create exuberance atmosphere.

KEYWORDS: ***hyper loop, attributes, edification, cutting edge of technology.***

INTRODUCTION

With the laps of years all the nations have been heading towards the advancement in the field of education. The technology has no doubt transformed the way of edification as compared to what it was in the bye-gone days.

What really sets apart is this; in the conventional approach edification is fulfilled if a teacher takes care of syllabus but the nature of integrated teaching and learning is such once teacher or pupil knows how to handle and use ICT, the life of edification starts in an exponential paths.

The traditional edification still exists in larger part of India and it focuses more on hypothesis and is a teacher centric process where teaching is monotonous and there is a monopoly of a teacher in classroom environment. In contrast the integrated teaching focuses not only hypothesis but also it builds link/connects to real life applications.

ICT acts as a core component of edification. It is the kernel of edification without which teaching and learning is impossible. All the curriculum subjects will be dealt with use of technology. This process of edification is called as *"*Integrated Teaching and Learning*"*.

A number of scholars have viewed the concept of ICT from different perspectives and viewpoints. ICT is also seen as a vital skill for learning different subject areas.

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CLASSIFICATION OF ICT IN EDUCATION

ICT can be classified in education in the following ways:-

(i) Teaching and Learning about ICT: In this type of classification teaching and learning takes place as of the one core subject in the curriculum.

(ii) Teaching and Learning with ICT: ICT acts as a handy tool and is a medium to facilitate teaching and learning pedagogy. Further it is the very next stepping stone for changing the face of edification.

(iii) Teaching Learning through ICT: In this type of classification, ICT acts as a core component of edification. It is the kernel of education without which teaching and learning is impossible. All the curriculum subjects will be dealt with use of technology this process of edification is called as "Integrated Teaching and Learning". The technology is a boon. Integrated teaching allows learners to acquire knowledge in different dimensions. It enables hyper loop to interact with subject experts for gaining hyper knowledge, further it has changed the face of edification.

"A Picture is a worth of thousand words", Since English is not our mother tongue most of the students fail in understanding the concepts in the classroom teaching, hence by introduction of integrated teaching, a teacher can show picture, image, animation or multimedia content or making video conferencing (expert teaching) for students to better understand the concept.

In its inception technology was restricted to the preparation of results, results publication, and circulating circulars in and outside the institution and particularly ICT was used for the administration in the school. Later the gizmos were became the part of classroom teaching and learning. Today by the integration of technology we developed cohesive system unknowingly, meaning entire organization is an umbrella of Information communication technology where teachers, experts, students and related folks exchange their information and the information is on finger tips.

With invent of new gizmos there is a dramatic improvement in the system performance. The Biometric attendance, Result Analysis through Excel application, online tests, video conferencing are some examples not only changed the working culture but also enhanced the system performance

Now education paradigm shift has taken place on the planet. In the developed countries like America, UK, All the schools, colleges and universities are practicing this new way of pedagogy teachers and pupils use tablets/smart phones and computers in edification. Further ICT is acts as mechanism in attaining, processing and disseminating abundant knowledge. In fact, it is a yardstick for measuring development of a nation in the 21st century.

REVIEW OF AVAILABLE RELEVANT RESEARCH WORK

The UNESCO (United Nations Educational, Scientific & Cultural Organization is an specialized agency of US (United Nations) having 195 members and 10 associate members. The Education is one of the core programme of UNESCO and is based in Paris.

According to the UNESCO report 2014 In South and West Asia, in Bangladesh and Nepal, ICT plans were published as recently as 2013 (Bangladesh, 2013; Nepal, 2013). In contrast, the Islamic Republic of Iran opted to include ICT in education within its national Master ICT Plan, while Bhutan, with the support of the UNESCO New Delhi office, has recently prepared a draft plan. Maldives does not currently have a plan. Lastly, given its federal nature, India does not have a national plan for ICT in education as it is the responsibility of individual states to develop plans to carry out policy set at the federal level. More specifically, states have the responsibility to define norms, standards, guidelines and frameworks to implement the policy in an effective manner, and to facilitate and monitor policy implementation (India, 2012).

MHRD (Ministry of Human Resource Development) Govt of India prepared a draft on National policy on ICT in school education in 2010, further it is revised on 23rd March 2012.

The concept of ICT in schools was initially introduced in December 2004. The Central Government later revised it in 2010 to ensure opportunities for students enrolled at the secondary level of education.

Presently, the Central Government has subsumed ICT in schools under Rashtriya Madhyamik Shiksha Abhiyan (RMSA), a national drive for secondary education.

Various initiatives have been taken by the Government of India for boosting the use of ICT in Education education sector. All e-resources are made available through e-CBSE. To achieve complete digitisation and smart education, the Ministry of Human Development has initiated several new initiatives.

The Central Government has answered the calls to the changing dynamics of education, especially to the importance of bringing ICT to the schools and colleges and improving the contour of classroom teaching and learning, the recent digital initiative like NAD, NDML, CVL, eCBSE etc. are commendable and the govt has a clear vision & set a road ahead for us. Further Central Government initiatives are good in many ways as it permits online submission of data through web portals.

Gap Areas: Need of swiftness in implementing technology:

Integrated teaching & learning has made rapid strides in the past couple of decades across the globe. Now

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it's our turn to bring a pace in the successful implementation of integrated teaching and learning because according to the 2014-15 Report of NEUPA (National University of Educational Planning and Administration) percentage of all schools equipped with computer in all over India is 26.42 which is alarming situation. The problem needs to be addressed seriously because in upcoming years the ICT will be the yardstick for measuring the development of the nation.

Table 1 2015 NEUPA Report All India - Schools with Computer

State	Primary Only	Primary with Upper Primary	Primary with Upper Primary & Sec & Hr. Sec	Upper Primary Only	Upper Primary with Sec & Hr. Sec	Primary with Upper Prmary i & Sec	Upper Primary with Sec	Sec Only	Sec with Hr. Sec	Hr Sec Only	All Schools 2014-15	All Schools 2013-14
All India	10.3	44.3	82.0	19.4	79.8	62.6	68.1	51.3	50.2	47.9	26.4	24.0

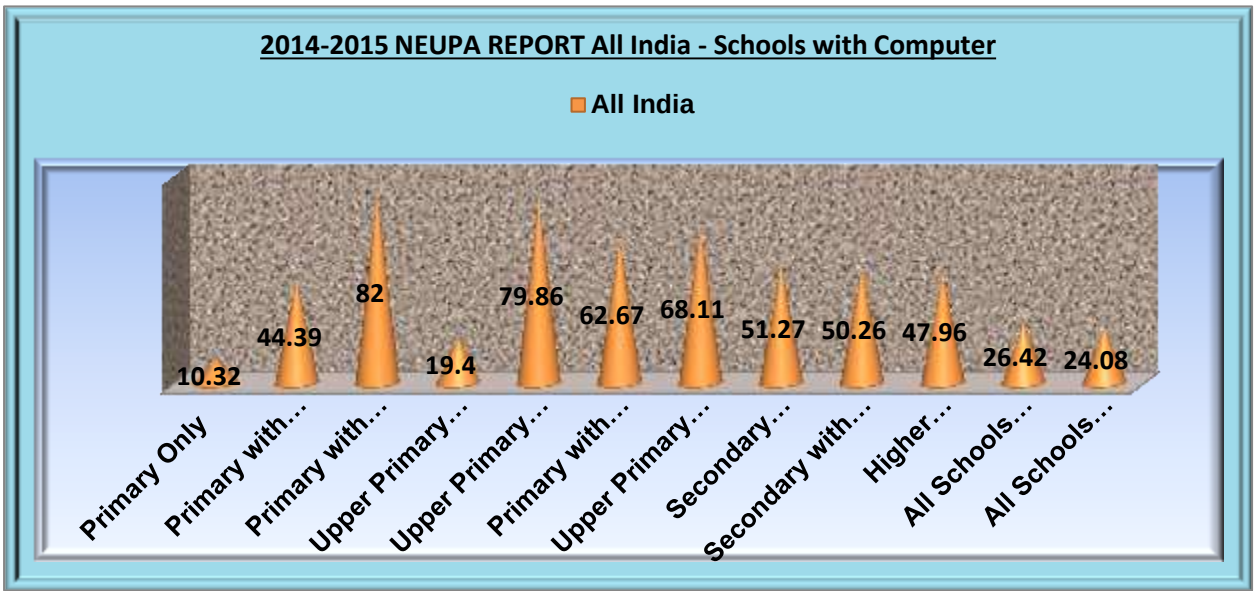

Figure 1: Graphical representation of Schools with Computer in All over India

METHODOLOGY

The Sainik School Amaravathinagar is exercising both traditional/conventional approach of teaching and learning and an integrated teaching and learning pedagogy. Students are experiencing both the paradigms. After getting an approval from the Principal Group Capt TN Sridhar Indian Air Force and Vice Principal Lt Cdr N Kattaboomman Indian Navy, 16 Questionnaire response sheet had been designed and screened among the students and the response had been recorded.

Total 100 cadets (students) of class VIII, IX and X response had been recorded on 26 Mar 2018 and to come to the conclusion, standard method of calculating of mean is implemented to the traditional approach and the integrated teaching and learning attributes.

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Table 2: Traditional Approach questionnaire

Attributes		Response	
i	Is it student centric?	Y	N
ii	Do you acquire more knowledge by this pedagogy?	Y	N
Iii	Is it more effective?	Y	N
iv	Weather it reduces stress of reading/ writing habit?	Y	N
v	Does it help in retaining the concepts and their terms/wordings?	Y	N
vi	Can you relate / apply acquired knowledge using this pedagogy in real life situations?	Y	N
vii	This approach is not more time consuming	Y	N
viii	Looking in to overall impact when comparing with integrated teaching, is traditional approach stands tall?	Y	N

Table 3: Integrated Teaching and Learning Approach questionnaire

Attributes		Response	
i	Is it student centric?	Y	N
ii	Do you acquire more knowledge by this pedagogy?	Y	N
Iii	Is it more effective?	Y	N
iv	Weather it reduces stress of reading/writing habit?	Y	N
v	Does it help in retaining the concepts and their terms/wordings?	Y	N
vi	Can you relate / apply acquired knowledge using this pedagogy in real life situations?	Y	N
vii	This approach is not more time consuming	Y	N
viii	Looking in to overall impact when comparing with traditional approach, is integrated teaching stands tall?	Y	N

RESULTS AND DISCUSSION

Weightage: Weightage for each of the question is 10 marks.
Evaluation Method: Using standard mean and deviation method the results were calculated on different set of marks.

Further the same weightage and calculation method is applied for integrated teaching and learning.

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Table 4 Traditional Approach Evaluation Methodology

Classification Index CI	Number of Students (*fi*)	Mark (x_i)	$d_i = x_i - 45$	$F_i.d_i$
10-20	7	15	-30	-210
20-30	27	25	-20	-540
30-40	25	35	-10	-250
40-50	15	45	0	0
50-60	12	55	10	120
60-70	9	65	20	180
70-80	4	75	30	120
80-90	1	85	40	40
Total	100			-540
Mean	39.6			

Mean $\bar{x} = a + \frac{\sum f_i d_i}{\sum f_i}$

Substituting the values of *a*, $\sum fidi$ and $\sum fi$ from Table 4

$\bar{x} = 45 + -540 / 100 = 39.6$

Outcome: The mean of Traditional approach obtained by the students is **39.6**

Table 5 Integrated Teaching and Learning Evaluation Methodology

Classification Index CI	Number of Students (fi)	Class Mark (x_i)	$d_i = x_i - 45$	$F_i.d_i$
10-20	0	15	-30	0
20-30	1	25	-20	-20
40-50	7	45	0	0
50-60	12	55	10	120
60-70	34	65	20	680
70-80	31	75	30	930
80-90	14	85	40	560
Total	100			2260
Mean	67.6			

Mean $\bar{x} = a + \frac{\sum f_i d_i}{\sum f_i}$

Substituting the values of *a*, $\sum fidi$ and $\sum fi$ from Table 5

$\bar{x} = 45 + 2260 / 100 = 67.6$

Outcome: The mean of Integrated Teaching and Learning Approach obtained by the students is **67.6**

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DISCUSSION

If we examine the outcome of both the pedagogy; it reveals that integrated teaching and learning stands at par and students are magnetized with this new technique of teaching. Schools must realize and practice this new way of edification.

Hiccups in implementation of Integrated Teaching and Learning Approach

(i) Cost Factor: One of the major hiccups in implementation of integrated teaching is the cost factor. For an educational institution in India implementation of integrated teaching will be the last priority because of other major factors like infrastructure, total number of staff etc are in the streamline of an educational institution and are yardstick to get an affiliation.

(ii) Cutting the edge of technology: With a very rapid changing technology updating of hardware and software components is the main cause for hindrance in the implementation of integrated teaching and learning in the schools further maintenance of systems is an additional burden for the schools in India.

(iii) Mundane among teachers due lack of skills: There is an element of doubt among the teachers to make full use of technology further most of the teachers afraid of using technology and they don't know how to use due to lack of skills.

(iv) Change of Government Policies & Technology: There is a leak, meaning due to frequent change in the rules and regulation & the technology there will be requirement of an up gradation of software and hardware components. Most of the schools either drop or will not use, and revert back to the old traditional method of teaching.

Three Tier Model: Staircase for the implementation and making full use of Technology

(i) Tier 1 – Granting more Aid: Government has taken a various steps in integration of ICT in the schools, presently Computers in the school are shared among students and proportion is not maintained. Since the schools are completely dependent on technology system administrator must be appointed in schools to upkeep the systems. Further government has to provide additional grant and continuous support to maintain the infrastructure and students sharing ratio of systems.

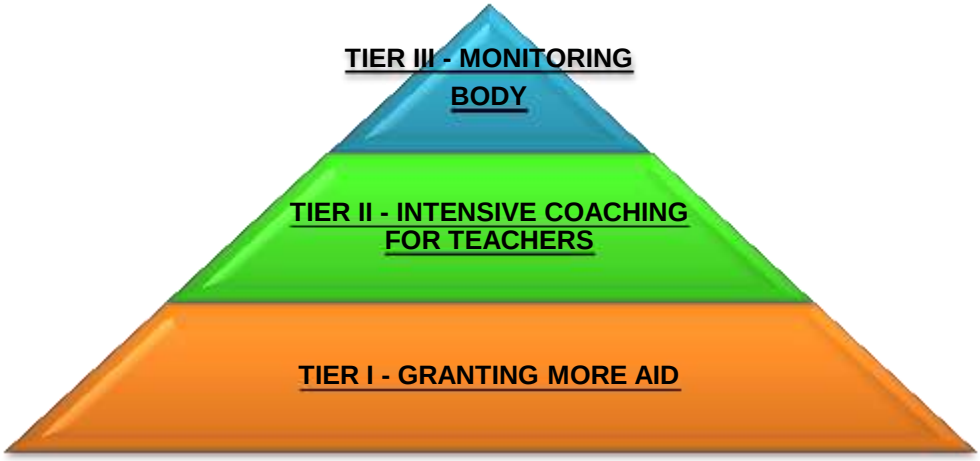

Figure 2: A Three Tier Model

(ii) Tier II - Intensive Coaching for Teachers (Training, Training, Training): With the invent of latest technologies, gradually, these latest inventions are becoming base for teaching learning environment. Hence to keep with the pace of technology it is necessary that teachers must be trained at regular intervals. To allure teacher government has to conduct training, training & training; to make full use of technology. In India any change is to happen in society there is need of mass movement. The policy makers and stake holders (Schools, staff, teachers & students) must exercise mass movement to bring a change in edification.

(iii) Tier III - Monitoring Body: According to the National policy on ICT in School education 2012 Programme Monitoring and Evaluation Group (PMEG) of the Department of School Education & Literacy, Ministry of HRD, Government of India, will be tasked with the overall

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responsibility of guiding the implementation of the ICT programme in schools across the country.

The Govt of India initiative is commendable still needs an active role to look after the plans, policies and the implementation strategies. Further A separate body is to be formed to monitor the usage of integrated technology in classroom environment. In addition the quarterly report needs to be collected by the educational institutions and is to be evaluated by the monitoring body. Further it should be the yardstick for the school to get affiliated to the state/central boards in India.

CONCLUSION

The Traditional/conventional approach has distasted by the current young generation and the students are showing greater interest in the Integrated Teaching and Learning approach. The effect of the use of technology in the teaching pedagogy is a new ray of education. In 10-15 years down the line conventional method of teaching will be disappeared in the advanced countries. Indian context, according to NEUPA the implementation has tortoise speed and needs acceleration and promotion. Government is making serious efforts; even then the policy makers must realize and make serious efforts to bring acceleration, Further it's up to the schools and teachers to make full use of the cutting edge of technology. At last if an Integrated teaching and learning is implemented in its full length or capacity, the role and the effort of teacher in class room reduces to the greater extent. Like in Cricket by the introduction of technology the role of on field umpire is almost disappeared.

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