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## A Study on The Impact of Technology Driven Teaching-Learning Education System

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**ABSTRACT:** The technology in teaching and learning is the keyword for the current educational sector. The study highlights on the implementation of such technology including the various tools and materials available and in practice no. The satisfaction survey and the opinion are adding a greater value for the positive change in the implementation. The Challenges can be overcome by the continuous practice and implementation of the tools available, moreover the interest towards learning to upgrade is an important culture need to be seen in the educational arena. The context is both the teacher and learner are nourished intellectually and reap the fruits for the betterment of the society and Nation Building.

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**KEYWORDS:** Learning, Change, Challenges, Online, Sustenance, Smart, Teaching, Technology, Tools.

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### 1. INTRODUCTION

Teaching and learning has been a part of the life since the birth. In fact even before the birth when the child is in the mother's womb responded to music and the mother's every emotions sensed by the father too. There is no occasion that we did not learn in the world. We always believe mother is the first teacher and the father is the first hero of intelligence to the child. The situation has been slowly gets changed after the mobile phone come into existence, child has become the hero to their parents in all its technology and usage. Now a day's parents used to contact children for any technical doubts on the mobile phone. The situation gives us an eye opening that how fast the technology has intervened into the kids and youngsters of this age, their learning ability also have changed. If we organize a debate on who learns first through the technology whether the teacher or the student then the conclusion would be amazing. It has through a big challenge for the teachers of the past age as well the importance of knowing about and implementing the latest technology and getting adapted to that in no time. The research has been carried on keeping all the above points into consideration and trying to screen out the best ways to adapt and succeed in using the latest technology in the teaching-learning environment. It also highlights the impact it has made at the end.

### 2. OBJECTIVES

1. To understand the existing learning curve from that of the past which is before the technology intervention?
2. To find the best possible way to soon get adapted to the change by both the teachers and learners.
3. To measure the impact it has created and the influence it has made in the education system as a whole.

### 3. TECHNOLOGY IN TEACHING - LEARNING

It is inevitable now that living with the technology. There are many witnesses that people becoming mad if they do not hold an electronic gadget with them, be it in the village or in the metropolitan. The impact the technology created is really more than that of we imagine.

#### A. Technology in use:

**(i) Media:** Right from the television channel which was earlier created by the Government of India in the name of UGC with the support of IGNOU and now has become GYAN Darshan made a great impact among the education system. Now many other tools like YouTube, WhatsApp, FaceBook and many more social media tools have been contributing to the maximum, now a day's students who were long absent also able to come out in flying colours in the exams with the very help of YouTube.

**(ii) E-Resources:** There are many e-resources in the name of courses, study, books, drama which supports from the basic education to the higher level of complicated learning. Many Complicated subjects are also made simple through this channel. The resources are created by many forward companies which have become high rated commercials. Many foreign Universities have already applied in their regular curriculum.

**(iii) University owned facilities:** The forward educational Institutions in India have come out with such resources and channels. NPTEL, UGC, MOOCs, COURSERA were all the examples of such programs, now it has become a valid certificate for employment as well, at times they are also prioritized.

(iv) **Company owned facility:** Across the globe many companies have come out with online channels through which anyone with a mere interest can take up the opportunity and made absolutely free. All it is required to succeed in the attempt. Few such facilities are CCNA, SAP, Testing software and many more. If you are certified then you will be able to start your profession.

**B. Benefits derived from the technology involved in teaching and learning**

(i) **Time and money consciousness:** The very most important use is time is being saved to the core and moreover money is also being saved. Therefore it is affordable in many ways for many people.

(ii) **Easy and enhancing the interest:** It is obviously increasing the interest of both the teachers and learners in many ways. It looks like an entertainment and then goes into their mind gets stored forever.

(iii) **Recall:** Another most important aspect is that it can be played back and recalled many number of times for better clarity. The faculty will also never be tired, he can concentrate on the advanced levels.

(iv) **Blended learning:** The technology enables a (Puentudura, 2007) combination of both in person training like face to face and also through the technology. It enhances the interest and increases the potential of learning. It also enhances of having a cluster of courses with technology enabled and few courses from the direct teaching and learning.

(v) **Collaboration:** Students find it a great opportunity in interacting with many unknown people as well across the globe using the general forum. Many software engineers have resolved the complicated situations through this channel. People from either side support generously.

(vi) **Individuality:** The technology gives enough confidence to the learners learning by themselves. The activity has enabled to stand strong in the relevant subject matter.

(vii) **Knowledge Retention:** It really improves (WEBANYWHERE) knowledge retention to a higher level. We knew when the people personally involve themselves in doing will definitely remember for a longer time, learning by doing.

**4. Frameworks for Technology Integration:**

**A. SAMR (Substitution, Augmentation, Modification, Redefinition)**

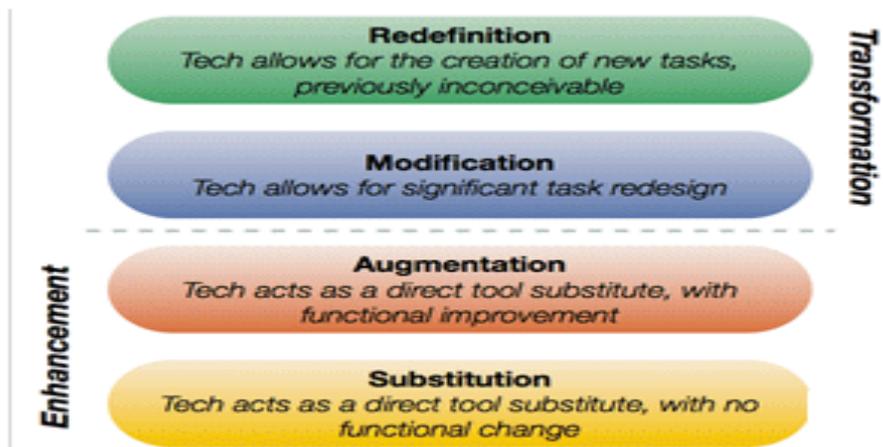


Image © 2012, by Dr. Ruben Puentudura

The SAMR (Puentudura, What Is Successful Technology Integration?, 2007) (Substitution, Augmentation, Modification, Redefinition) model, has been defined by Dr. Ruben Puentudura, which helps us in knowing the fact that how technology is being integrated in the education system. It also clarifies the accomplishment of its ultimate goal is to succeed in teaching and learning.

**B. TPACK (Technological Pedagogical Content Knowledge)**

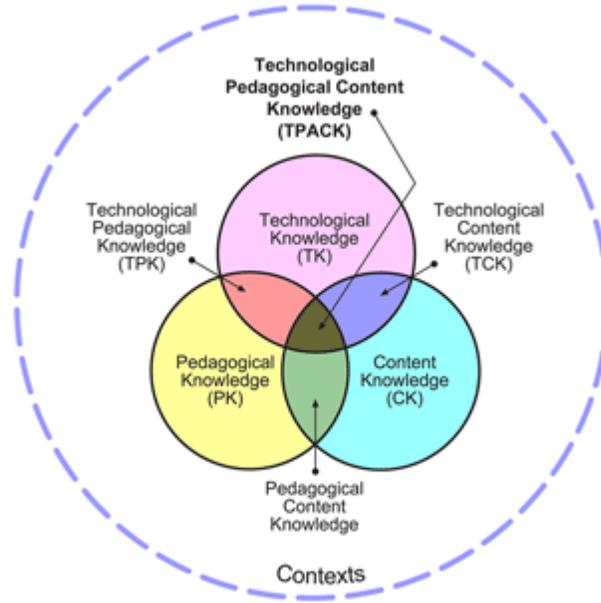


Image © 2012, by TPACK

Dr. Ruben Puentudura has also introduced the (Puentudura, What Is Successful Technology Integration?, 2007) TPACK (Technological Pedagogical Content Knowledge) framework. The picture very clearly states that how pedagogy is inculcated and succeeded in the teaching learning through technology.

**C. Levels of Technology Integration**

Mary Beth Hertz (Hertz, 2007 ) has shared the different levels of technology integration and its success.

1. Sparse: The meaning of this phrase is that the technology is rarely used by the students.
2. Basic: The next level is that the technology is being used by the students occasionally though all the tools are available they choose only few to use.
3. Comfortable: In this level the usage is really high by the students. They are very comfortable as well. Therefore it results in high degree delivery of the output required in the learning expectations.
4. Seamless: Here the students are very familiar with the tools and use it on a regular on a basis and in turn it will become the part of their profession in future.

**5. EVIDENCE OF THE TECHNOLOGY INFLUENCING TEACHING-LEARNING PROCESS**

**Table 1. Opinion of teachers regarding the factors influencing use of ICT for effective teaching learning process in secondary schools (al, 2015)**

Sr. No.	Statement	Strongly Agree	Agree	Unsure	Disagree	Strongly Disagree
1	Teachers with more education are likely to use ICT resources in teaching-learning process more effectively.	22%	60%	-	15%	3%
2	Teachers who have access to ICT resources are likely to integrate technology in teaching-learning process.	31%	50%	5%	6%	8%
3	Teachers' computer self-efficacy has greater effect in teaching learning	35%	7%	5%	15%	8%

	process.					
4	Teachers' gender differences influence use of ICT in teaching.	32%	17%	21%	23%	7%
5	School education department should replace the traditional teaching aids by new ICT tools to improve the teaching-learning process.	32%	53%	2%	8%	7%
6	Teachers' attitude influences successful integration of ICT into teaching.	30%	47%	7%	12%	4%
7	Government has a good policy to improve the present condition of ICT in secondary schools.	35%	47%	5%	5%	8%
8	Head teachers' leadership is strongly related to teachers' use of computer technology in teaching.	20%	65%	5%	8%	2%
9	The school education department supports teachers in ICT trainings.	-	-	5%	15%	80%

The above table proves that the teachers are very much positive towards the utilization of the ICT tools. Though it be new or whether the concerned departments support in the development or not still they go forward in implementing the technology and succeed, since there are many notable benefits like makes their work easy and effective, still have time to improve in their profession and many more.

**Table 2: Teachers' opinion on ICT enabled teaching – learning (MHRD, 2012)**

S.No.	Expression	Strongly Disagree	Disagree	Agree	Strongly Agree
1	Confidence in learning computer skills	0	5.9%	69.3%	24.8%
2	ICT is easy	0	11.9%	69.3%	18.8%
3	ICT facilitates effective teaching	0	7.9%	56.4%	35.6%
4	ICT supports effective learning	1%	7.9%	53.5%	37.6%
5	ICT – improves quality of teaching	1%	7.9%	60.4%	30.7%
6	Improved class engagement	0	8.9%	57.4%	33.7%
7	ICT is very time cautious	0	25.7%	54.5%	19.8%
8	ICT is waste of time	23.8%	47.5%	26.7%	2%
9	Students attention is reduced due to ICT	23.8%	53.5%	22.8%	0
10	Students effort is reduced due to ICT	22.8%	55.4%	19.8%	2%

The above table describes that the teachers are more interested in the ICT enabled methodology. Because of its own benefits, they disagree with many negative points on the ICT enabled teaching learning methodology.

## 6. IMPACT OF TECHNOLOGY IN TEACHING – LEARNING

### 6.A. Application of Information and Communication Tools

1. Laptop for every individual
2. Tablets also do the same role as laptop.
3. Interactive White Board / Smart Boards: In which the classroom is fitted with such boards and the students can directly learn by changing the lessons and it functions as a touch screen.
4. E-Readers: This device will hold all the text in electronic format, meaning with less weight the students can carry hundreds of books.

5. Flipped Classroom: The model supported by the ICT will enable both the teacher and students to have an equal part to play in the classroom. The teacher would just be a high skilled facilitator.
6. MOOCs (Massive Open Online Courses): The students can do a parallel course and do many interactions through the software and learn, submit assignment, attend test and many more.
7. Other Institutions ERP: Every (Wolpert-Gawron) educational institutions have their own software or an ERP which is enriched with all the academic and official works. The students and the parents are well informed about the results, exams and many more. In fact it is easy and convenient for the teacher to conduct the test and the students also can attend from anywhere with a secured and integrity.

### 7. CHALLENGES FOR THE BETTERMENT

There are many challenges on the implementation (Wolpert-Gawron) of technology enabled teaching and learning education system. The challenges are not unsolvable, but needs the complete involvement of both teachers and students so that it can resolve in a shorter time.

#### 7. A. List of problem faced by the teachers on technology utilization

1. Fail to be upgraded with the latest version.
2. Error of proper implementation during the class hours.
3. Issues like enabling all the classrooms with ICT facility.
4. Internet issue.
5. Lack of infrastructure, since many classroom are designed for a traditional methodology.

#### 7. B. Overcoming the challenges

1. Be a continuous learner including technology.
2. Providing monitory benefits to the faculty to upgrade accordingly.
3. It is okay to find help from colleagues and even from bright students, in the course of time we give them on the job training.
4. Institutions providing the entire required infrastructure.
5. Keep up the curiosity.

#### 7. C. Usage of Technology and the challenges

S. No.	Tools	Usage	Challenge
1.	Social Media	Enables both the teacher and the student to interact very frequently.	Costly, since use of internet and other irrelevant sites comes in-between.
2.	E-Reading	Many (Courville, 2011) information with very lesser space.	Continuously using the tools will affect the eye sight.
3.	CBT	Easy and can handle large volumes	Power failure and less controlled malpractice issue and tedious sometimes.
4.	LMS	Delivery is very easy	Many students face technical challenges and chances of omitting much important information.
5	Collaborative online tools	Continual improvement in the content	Costly, since many a times operated by the third party.
6.	ERP	Content delivery and monitoring is very easy.	Challenge of handling slow learners.
7.	Robot	Classroom management is easy and very cost effective.	Students will lose the empathy and sympathy required sometimes.

## 8. IMPACT ON RESISTANCE TO CHANGE

The study has highlighted many (Ghavifekr, 2015) tools, uses, challenges and the resolutions as well. In case if we do not follow the current and speed we might face some of the following consequences.

- a. We might be left aside in the realm and race of the system.
- b. There are many chances of losing opportunities and in turn will be less profitable.
- c. The transition happening in the education system will not permit to continue the career.
- d. The best way of learning is ignored and as a teacher we would be considered as blind.

## 9. TAKE-AWAYS

The study has given clarity that the teaching learning process will become obsolete without technology intervention and integration. The technology by its nature reduces the heavy load of anything we do, though it is industry or in the education sector. The time is now that the transition happens in a bigger way in the educational sector and every one interested in it will pull up their socks and run the race ahead. Therefore starting early is the mantra. Inculcate the system from the very beginning. (al S. D., 2012) Upgrade and be a continual learner. Keep your eyes wide open to know the changes and its implementation. India seems to be starting little late but going ahead with a greater pace because our country has the testimony of starting the world's first University and knowledge sharing across the globe since the civilization.

## 10. CONCLUSION

The study has given an immense pleasure since it is all the part of our life for the past two decades that without the technology the life becomes almost zero. It is impossible to lead a normal life without the technology. It is not new or an amazing news that the technology is becoming a catalyst in the education sector as well. The youngsters are actually running a head of it but it the responsibility of the teaching community to teach them the basics otherwise the discipline and culture will become a great question mark. The Universities abroad has started well in advance right from the kindergarten and to the research. The Indian educational institutions are inculcating in their curriculum and it is not a surprise teachers will play a very little role but a strong role in the race. Intelligence is no more a secluded property due to the technology. Happiness index must be ensured in all the realm of the changes and challenges.

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