

## Teaching & Learning Digital vs. Traditional Pedagogy

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### Abstract

*There are several ongoing debates, discussions and deliberations' on the enduring topic of education and the system of education, all over the world. The influx of technology has garnered newer dimensions towards teaching pedagogy and meeting the challenges of corporate skill requirement. The world is becoming a global village with boundaries disbanding and diffusing. The concept 'net neutrality' of late, which is becoming a buzz word can also influence teaching pedagogy to a great extent, similar to that of MOOC (Massive Open Online Course), which is being clubbed along with the traditional teaching pedagogy, for ensuring effective dissemination of knowledge from the teacher to the student. Recently the University of Mysore, one of the oldest and reputed Universities in India, became the first University in Karnataka to offer MOOC.*

*This paper gives an empirical view into the prospects of classroom teaching in future, based on discussions and feedback analysis of educationists from institutions of Higher Education both from Engineering and Non-engineering stream in Mysuru city, Karnataka State.*

**Keywords:** Teaching pedagogy, Higher Education, Net neutrality, MOOC.

### Introduction

Education in present day terms is not just a necessity but a part of our living system. Unlike in earlier years, education is now considered as a continuous process; till life's very end. Education has hitherto crossed all barriers of region, age and geographical boundaries', thanks to technology. Similarly it has been observed that the Indian higher education system is the third largest, next only to the United States and China. Though the legendary Indian Gurukula system of education has becoming obsolete with the mushrooming of educational institutions equipped with modern paraphernalia; the introduction of distance education system, flexi-learning and the latest being Massive Open Online education (MOOC), all over the world, direct and indicate drastic changes in the education system. It has infact given rise to the question of 'what could be', the best form of teaching-learning. In effect, this has become a debatable topic among all academicians worldwide.

Massive Open Online Education experience can be achieved through open access approaches, through comparatively low cost. MOOC as we all know stands for Massive Open Online Course and a model for delivering learning content online. This system focuses on unlimited participation of the student, at their convenience and with no limit on attendance via the web. It also encourages interactions between the tutor and the student. The concept MOOC is a new researched development for facilitating distance education and was introduced in 2008. It is presently a popular mode of learning. It is believed that a course offered by the Hong Kong University of Science and Technology, through Coursera which commenced in April 2013 is considered as Asia's first MOOC and has registered 17,000 students. MOOC uses video lectures where the traditional system of teaching using new technology is employed. Infact, David Finegold of Rutgers University has defined MOOC as the 'New Textbook'. The University of Mysore, recently became the first University in Karnataka to offer MOOC by adopting SQAYAM- Study Webs of Active-Learning for Young Aspiring Minds. A workshop on Adoption of UGC-MOOCs SWAYAM courses was organized by the CDC-College Development Council and SWAYAM Digital Learning Monitoring Cell on 19th June 2019. This initiative will help post graduate students of the University to choose 44 subjects under the UGC- MOOC SWAYAM platform.

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As per available public notification, Google wishes to power online learning revolution with Mooc.org. The notification states that EdX, the not-for profit learning initiative founded by Harvard and MIT, have entered into a partnership with Google to jointly develop an open-source learning platform called Open EdX.

NET Neutrality concept focuses on free access to consumers on an equal basis, treating all Internet traffic equally. Making use of this principle, those interested in enhancing their skill and knowledge in other courses related or interdisciplinary could have provision of enrolling and graduating in such courses irrespective of their profession, background education and so on, where-in presently, accessibility to certain web contents is the privilege of a particular group of professionals or members.

According to the Indian context, clear guidelines are yet to be identified; however, net neutrality could help educationists in disseminating knowledge quicker and to a wider area. The negativity could be that those signing up for priority delivery may spend more and pass on the increased cost to the customer which in turn could see a higher cost in education. The new dialogue on Net-Neutrality is another connecting subject that can be linked to the teaching-learning process as well.

### Significance of the Study

A study by Anne Mai Walder on the concept of pedagogical innovation in higher education has explored how academicians define their conception of pedagogical innovation. The study highlights that the twenty-first century university is facing pedagogical innovation. We observe changes in teaching pedagogy when compared to the system adopted previously. The uses of Power Point Presentations, Smart Boards seem to be a common practice in a majority of educational institutions, even for the lower level classes. The concept MOOC is playing a major role which blends both the traditional system of teaching-learning and blending technology for enhancing the process. Educationist Thrun has stated that MOOC - 'courses are ' designed to be challenges,' not lectures, and the amount of data generated from these assessments can be evaluated 'massively using machine learning' at work behind the scenes. This approach, he said, dispels 'the medieval set of myths' guiding teacher efficacy and student outcomes, and replaces it with evidence-based, 'modern, data-driven' educational methodologies that may be the instruments responsible for a 'fundamental transformation of education' itself'.

It has been observed that there have been massive enrollments for higher education through online / distance learning and therefore it has been mooted that MOOC's require instructional design that could facilitate large-scale feedback and interaction. Two basic approaches that have been identified are (a) Peer-review and group collaboration and (b) automated feedback through objective online assessments. (Connectivist MOOC's rely on the peer-review and group collaboration while broadcast MOOC's tend to follow the automated feedback approach. Shanna Smith Jaggars through her study compared online-only and face-to-face learning students at Virginia and Washington State and has observed that, in Virginia, 32% of students failed or withdrew from for-credit online courses, compared to 19% of the students who preferred face-to-face learning.

This study tries to analyze and comprehend the concept and teaching pedagogy which may be adopted in future class room teaching- learning process, based on the feedback collected from experienced academicians belonging to engineering and non-engineering streams.

### Objectives

It is observed that technology is influencing every individual and every activity wherein, the educational sector has not been left behind. The traditional system of teaching has given way to modern methods of teaching methods for ensuring better learning among the students. Technological innovations are influencing teaching learning environment all over the world. Emerging technologies are stimulating educators and learners to come out with innovative methods of teaching and learning. Keeping this in view, the objective of this study is;

1. To examine the role of teachers - a decade hence.
2. To forecast the concept of future classroom teaching
3. To examine the influence of technology on improving competency skills among students.

## Hypothesis

H<sub>0</sub>: The future of class room teaching pedagogy would be totally technology driven.

## Methodology

This study is empirical in nature as it follows the primary method of collecting data from the identified respondents. Judgmental sampling method was used for identifying respondents for the study. The identified respondents include experienced faculty members from reputed institutions in Mysuru City, both from engineering and non-engineering colleges. The total number of respondents to the study was 135 highly faculties, presently teaching at various institutions of higher education in Mysuru City. Data for the study was collected through Primary and Secondary sources.

**Table 1. Showing the Summary of Research Methodology Adopted**

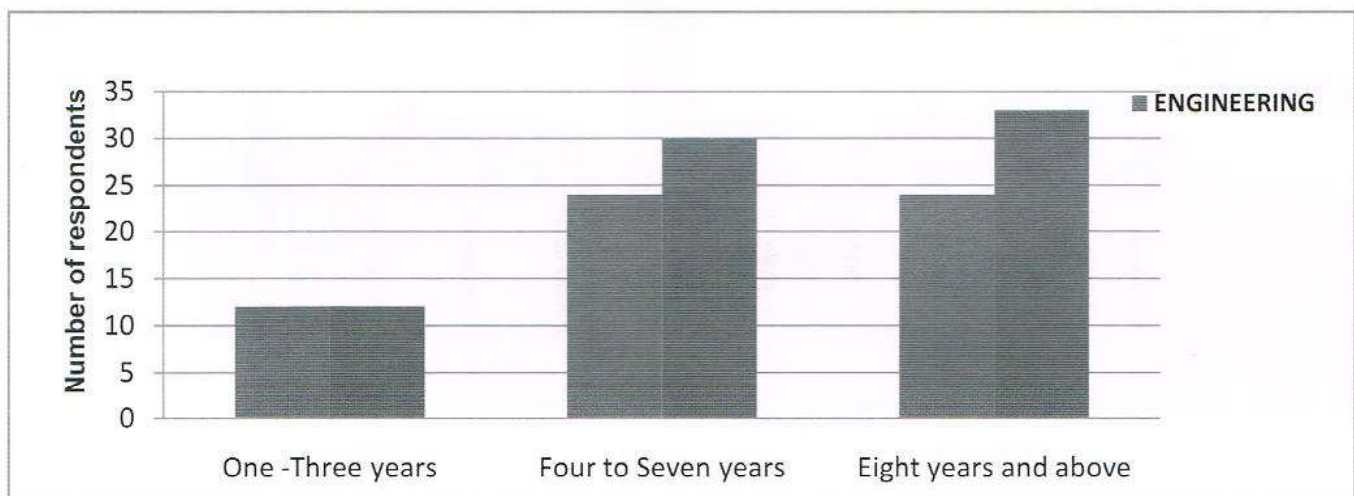
Research design	Exploratory and Descriptive Research
Sampling Technique	Judgmental / Purposive sampling
Sampling Unit	Academicians from Engineering and Non-Engineering Colleges of Higher Education in Mysuru City.
Sample Size	135 Academicians from various colleges imparting higher education in Mysuru City.
Research Instrument	Questionnaire.
Data Collection	Distribution of questionnaire and direct interviews

Source: Survey data

## Analysis and Discussions

The respondents chosen for the study included academicians from Engineering and Non-Engineering institutions in Mysore City. Out of the total of 135 respondents, 60 were from the Engineering Stream while 75 were from the Non-Engineering Stream. This study observes that from the existing respondents, the ratio of male and female faculties in these two streams were inversely proportional. While the numbers of male faculty were less when compared to the female faculty in the engineering stream, the opposite was observed in the non-engineering stream where the number of male faculty were more when compared to their female counterparts.

**Chart 1. Showing Work Experience of Academicians who responded to the Study**

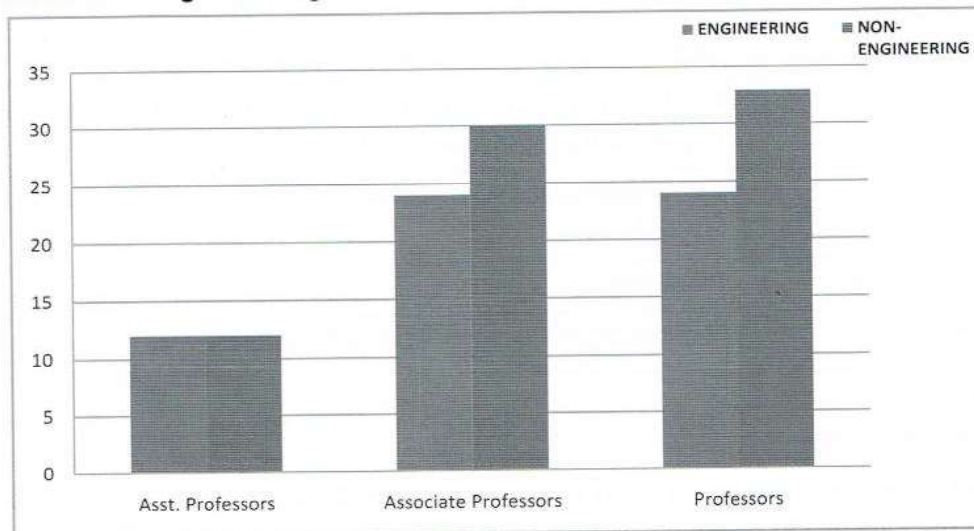


Source: Survey Data

The study focused mainly on collecting responses from faculty who were experienced and were presently teaching in Institutions of Higher Education and Engineering Colleges. The study also focused on analyzing the opinion of Engineering College faculties and the Non-Engineering College faculties in Mysore City. Chart 1 (above) and Chart 2 (below) show the distribution of work experience and the designation of faculties from Engineering and Non-Engineering stream respectively.

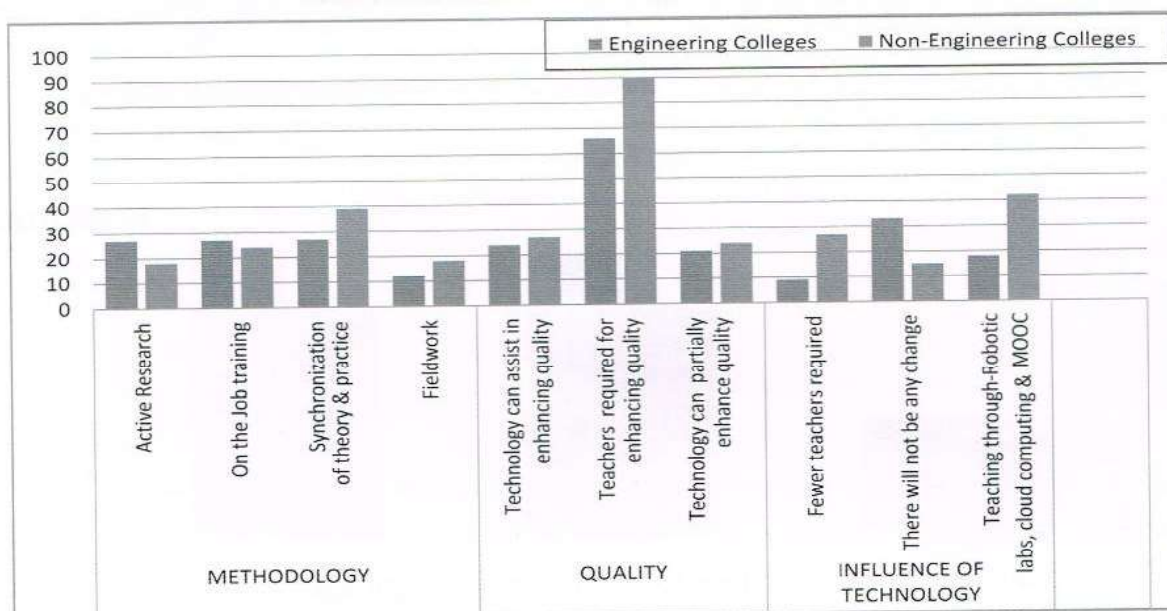
The respondents consisted of academicians from the Engineering and Non-Engineering stream. It also included both male and female faculty members from the two streams. The Engineering stream included 15 male and 45 female faculty members and the Non-Engineering stream included 48 male and 27 female faculty members, totaling 135 respondents in all. It has been observed through the study that in case of engineering college, majority of the faculty was women when compared to the non-engineering counterparts. The explanation found was that the engineering male graduates preferred corporate jobs to teaching while the female faculty preferred teaching profession. However, this was not observed in the case of non-engineering colleges.

**Chart 2 Showing the designation of faculty who responded to the questionnaire**



Source: Survey Data

**Chart 3 Showing the consolidated diagrammatic representation regarding future methodology, quality of education and effect of influence of technology in future education**



Source: Survey Data

### Interpretation

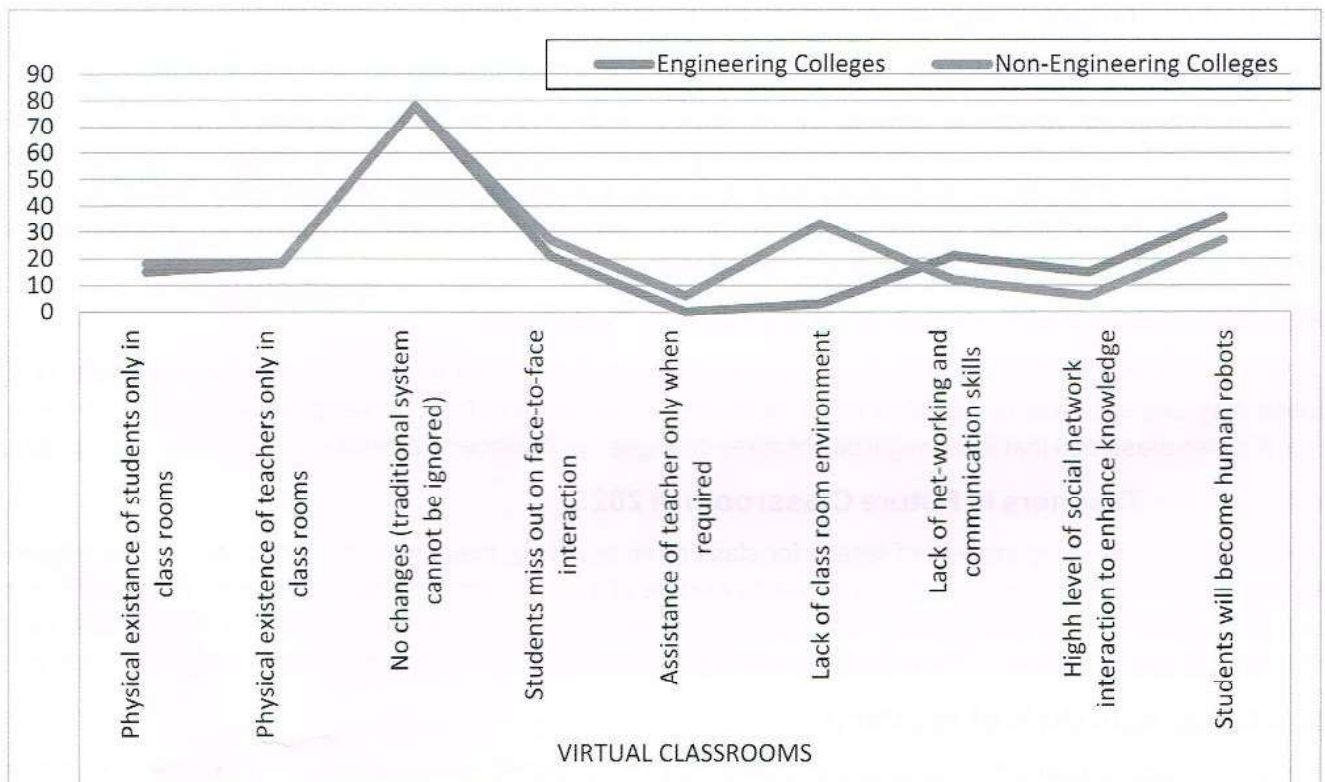
The study observes difference of opinion between engineering college faculties and non-engineering college faculties. The engineering college faculty sensed that there will be more active research oriented teaching along with on-the-job training while focusing on teaching methodology. However the non-engineering faculties mention that there will be more synchronization of theory and practice along with fieldwork which they felt will be the future teaching methodology adopted. Similarly converging on quality of education, the non-engineering faculty felt that teachers would be required for enhancing quality of education as technology by itself would be insufficient. While the majority of the engineering counterparts felt that same, yet a few were of the opinion that teaching could become virtual and there would be need for teachers only for specific course/subjects. They cited YouTube videos as an example where a person having any doubt could get instant clarification from a host of people who have uploaded answers to the same. However both the groups were of the opinion that technology would assist in enhancing teaching-learning experience.

### Future Teaching Methodology

The respondents to the questionnaire gave varied opinion on the kind of methodology that will be followed in teaching pedagogy in future classrooms. We can observe from the above chart that majority of the respondents are of the opinion that the traditional system cannot be ignored. It is also observed that there are differing views regarding teaching methodology in future classrooms by the engineering and non-engineering teaching fraternity. The other opinion shared by the respondents' state that class room teaching will be more interactive with smart boards in every stage of education. Eclectic features will be adopted along with the traditional system of teaching-learning.

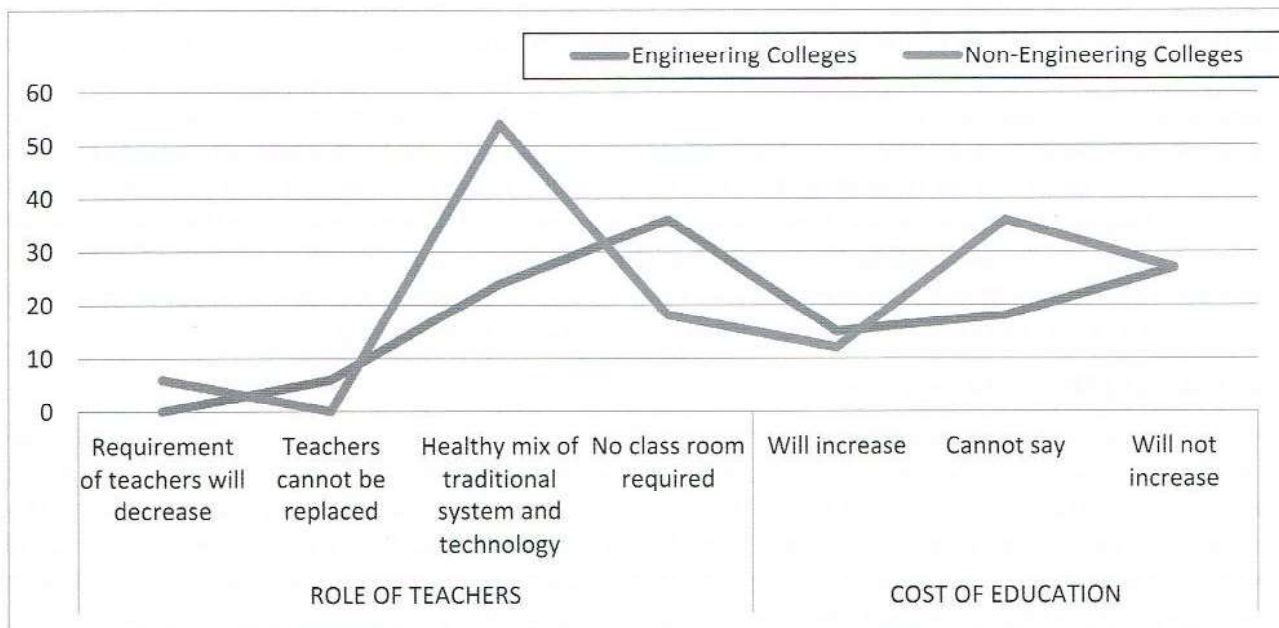
On the concept of influence of technology in class room teaching, the respondents from the engineering group felt there would not be any change but the non-engineering group of respondents felt there will be change in the teaching-learning environment. The non-engineering group of respondents also felt that Robotic labs, cloud-computing and MOOC will become order of the day.

**Chart 4 Showing the results of presumptions of the respondents regarding future class room atmosphere**



Source: Survey Data

**Chart 5 Showing the results of presumptions of the respondents regarding, role of teacher in future classroom and cost of education**



Source: Survey Data

### Cost of Education

Respondents from Engineering and Non-engineering colleges shared similar opinion regarding the future cost of education. Majority were of the opinion that cost of education will not increase as the availability of information has hitherto become very accessible. It is also presumed that technology up-gradation would ensure that cost of getting education would decrease. However it is also observed that the respondents were not sure whether technology could be the reason for either bringing down or would increase cost of education in future.

### Competency Skills in Students

The respondents gave various opinions on influence of technology for increasing competency skills in students. Majority mentioned that the traditional method of teaching and learning cannot be ignored. According to them Traditional method of teaching is important. Technology cannot replace the academicians', though it can assist in enhancing competency skills. None of them responded on both synchronization of both technologies along with some practical aspects required to enhance the competency skills of students.

### Increasing Influence of Technology in Education Pedagogy

The respondents from the engineering stream presume that the need for teaching faculty in colleges of higher education may decrease due to the influence of technology while faculties from non-engineering colleges differ in their opinion. It is also presumed that there might be not many changes by influence of technology in education pedagogy.

### The Role of the Teachers in Future Classroom in 2025

With respect to the requirement of faculty for class room teaching, majority of the respondents (non-engineering faculty) were of the opinion that there will be a healthy mixture of the involvement of technology and the use of traditional system of education. Whereas, faculty from the engineering stream were of the opinion that there would be fewer requirement of class room teaching as technology would take over the role of traditional teaching to a greater extent.

### Future Classroom Style of Teaching

As per the above charts the respondents stated that, the traditional classroom style of teaching will not vanish completely in future though they predict that there will definitely be slight changes in the system of education due to the

influence of technology. Further the study opines that the physical presence of both students and teachers in classrooms may reduce to some extent due to the advent of MOOC, VSAT etc. Similarly the use of chalk, paper and pen may reduce but will not become obsolete. This justifies that the physical presence of a teacher during the teaching-learning process plays a crucial role in knowledge assimilation and dissemination.

### Technology helps in Enhancing the Quality of Education for Students

According to Non-engineering college respondents, technology can help in enhancing the quality and skill in students but according to engineering colleges with the absence of teachers' guidance and support the students cannot enhance their skills only by using technology. Some of the respondents stated that technology can help the students to some extent in enhancing the skills and knowledge but not completely.

### The Classroom Teaching is Totally Virtual, how would it affect the Students

By analyzing the above data we can clearly observe that, classroom teaching is very important and the physical presence of both teacher and students is very important in teaching pedagogy in order to ensure better teaching-learning process. If the classroom are virtual, the students may end up building network through social networks to enhance their knowledge but they may lack practical applicability, face-to face interaction and communication, turning them into human robots.

### Kind of Methodology that can be adopted by the Teachers to make the Teaching – Learning more effective

The outcome from the study shows that the future teaching methodology would include more of active research, on the job training and practical training in teaching pedagogy. This could be achieved through the influence of technology. This was the opinion from both the Engineering and Non Engineering faculty who responded to the study.

### Statistical Test of Hypothesis

$H_1$ , There is significant relationship between technology and future class room teaching pedagogy

The result of statistical analysis show a positive correlation value at 0.76 at 0.05 level of significance, which reveals that there is a significant relationship between technology and future class room teaching pedagogy. We can also observe this result through the Chart-4 where the responses from both the group of respondents seem to be similar. Hence, we do not reject the null hypothesis as it stands true.

### Conclusions

Based on the responses from the academicians who responded to the study; this pilot study helps us infer that there will be a significant relationship between technology and future classroom teaching pedagogy. Similarly the outcome of knowledge and skill in future class-room teaching will enhance competency skill among students. There would be more use of MOOC in teaching pedagogy simultaneously with the traditional class room system of teaching. Technology would definitely assist in enhancing the teaching-learning process. Though, critics on online teaching mention that

1. Relying on user-generated content can create a chaotic learning environment
2. Digital literacy is necessary to make use of the online materials
3. The time and effort required from participants may exceed what students are willing to commit to a free online course
4. Once the course is released, content will be reshaped and reinterpreted by the massive student body, making the course trajectory difficult for instructors to control
5. Participants must self-regulate and set their own goals

However, the study identifies that technology is here to stay and will definitely bring relevant changes as is already being observed though the whole educational system may not change but there will be systematic and gradual changes in educational system due to the advent of technology not only in the education sector but in all walks of life.

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