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# Role of Educational Technology in Equality, Diversity and Inclusivity

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**Abstract:** *Educational Technology has been the need of the hour during COVID 19 as everyone is hailing and dependent upon technology. Technology has greatly expanded access to education for preparing the talent needed for the digital economy. Massive amount of information is available online and opportunities for communications and collaboration have also been expanded by technology. Surely 2020 has brought plethora of opportunities for professionals and students which has emerged the concept of Equality, Diversity and Inclusivity which is a paradigm shift in education sector. Technology has played a crucial role in our lives and has created a boon for information technology industry.*

*The present paper will encompass the objective of effect of Education Technology on learning process of students with regard to Equality, Diversity and Inclusivity. This research in terms of method is descriptive so an empirical study is conducted through 108 questionnaires based on five point Likert Scale and all the questionnaires complete in all respects were used for drawing generalizations. Various statistical tools like Correlation, Regression analysis and ANOVA has been applied to draw conclusions. The reliability of data will also be tested through Cronbach's Alpha so it will be easier to draw conclusions.*

**Key words:** *Education Technology, Equality, Diversity and Inclusivity*

## 1. INTRODUCTION

The role of educational technology in the field of Equality, Diversity, and Inclusivity has highlighted in the present era by academicians. Many researchers are looking forward in



complying the equal opportunities with every student and providing sustainable environment. (Medina-García, et.al 2020) talked about equal opportunities in the interest of educational policies so as to create sustainable environment. The results highlighted the positive effect of concept of diversity, equality and inclusivity. Education Technology is essential for educators, for their working knowledge of media and its influence on performance and engagement is essential feature in this pandemic era (Zhang & Martinovic, 2008). During COVID 2020 online education has become the need of the hour and is creating a buzz in the whole world. Education Technology is improving rapidly in our country and is helping learners understand topics through virtual reality. It is increasing the business in the field of education and technology both by developing various software like **BYJU'S, BRAINLY, CLASSPLUS, COLLEGEDUNIA, CUEMATH, CULTUREALLEY, DOUBTNUT, DOST EDUCATION, EDUKART, EKEEDA, EMBIBE, ENTRI LEARNING APP, FLIPCLASS, UNACADEMY, WHITEHAT EDUCATION TECHNOLOGY** etc. Both the educator and beneficiary are benefitted through the medium of education technology. It can be viewed from the prospective view of student as well as faculty who are imparting online lectures during this pandemic era. Educational technology has the ability to provide the flexibility for lifelong learning that able to meet students need without the time and space barriers( Chinien, 2003). The uses of educational technology get a strong push from nation so that the learning process will be more effective (Luaran, 2011). Teachers are playing their best role to enhance the teaching and learning processes at education institutes and universities to achieve their ultimate objectives to make children efficient in the usage of education technology techniques. The use of ICT in education is considered a vehicle to improve the existing curricula and management processes in educational organization (Makau, 1990).

(Szromek, A. R., & Wolniak, R. 2020) advocated education and scientific process in relation to human development among polish researchers. Employee's personal characteristics, the manager's personal characteristics, management style and the nature of the work itself creates equality, diversity and inclusivity as regards to satisfaction of employees. Managers who want to maintain a high level of job satisfaction in the work force must try to understand the needs of each member of the work force.

In a report of Summary of papers from Equality Challenge Unit and Higher Education Academy joint conferences have collaborated various reviews on the role of educational technology in Equality, Diversity and Inclusivity by introducing key areas which need to be focused. These areas are connected with diverse factors which emphasizes on factors responsible for Equality, Diversity and Inclusivity. They are-

- Interrogating and disrupting pedagogies norms reveal that how the teaching fraternity is using various tools and techniques in enhancing learning skills of beneficiaries. Here educational technology plays a dominant role as evaluating pedagogies directly mark that how lectures are



delivered and what methodology followed. The mechanism brings about relevant changes with regard to equality, diversity and inclusivity. It creates learning environment for each student which enhances the efficiency and inculcates the motivation, reward and recognition.

- Belonging and student engagement encompasses the role of educational technology in the manner that student engagement is the foremost importance as they are the sole beneficiaries. The changing environment in higher education also tends to bring equality, diversity and inclusivity in the activities where students are involved.

- Using technology-enhanced learning is one of the major factors responsible for bringing equality, diversity and inclusivity as everyone in the present era has understood the importance of technology. By and large the student and teaching faculty has been benefitted a lot and has brought drastic changes in the field of education. Many virtual platforms and apps have been designed in imparting the knowledge to the students. All institutions planned for virtual learning environment as it became need of the hour during Covid times. Till now also things are working virtually.

- Working in partnership conceptualizes equality and diversity in providing curriculum environment to each student disregard to ability or non ability to grab the things. It's the collaborated effort of teaching and learning environment provided by the teaching fraternity. The student's expectations are met by college as well as university level and it becomes the sole responsibility of the educators to provide equal opportunities to each student. Good practices, awareness campaigns, proper information management system has to be provided to all graduates and post graduates students.

- Equality and diversity as a graduate attribute, including equality provokes the idea of providing equal learning environment to students which provides effective guidance to students in their classes. Educational technology is performing by and large this function very appropriately and students are being benefitted to a large extent.

- Diversity training provides the hallmark inculcating diverse training and learning pedagogy to all beneficiaries. The positive revelations can be judged and diversity can be fostered in students. Here also educational technology plays a vital role and brings about relevant changes in one's life.

- Developing staff capacity is feather in cap of educational technology as staff is of utmost importance in fulfilling the organizational goals. Well trained staff having huge caliber surely brings about relevant changes in any organization. Inclusive learning in higher education leads to fulfillment of achievement of organizational commitments towards staff and students. (Staric, A. I. 2010).

### **Literature Review**

(Wikramanayake, G. N. 2005) emphasized on process of generation, creation and acquisition of knowledge through the technology. It studies various tools such as relational database management system (RDBMS) which is used for knowledge management. Electronic Document Management System (EDMS) for efficiently handling the information, DSS are software products



that transform operational data into useful information. The study has been theoretically drafted.

(Martinovic, D. 2008) advocated around teaching and learning process through Information and Communication Technologies (ICT) techniques. A modified structured questionnaire was utilized to draw conclusions emerging themes related to participants' social conditions that impact their perceptions and attitudes regarding the ICT and beliefs about the use of ICT in their future careers. The idea behind the research is to promote lifelong learning with intelligence and thought provoking activities for beneficiaries. The crux of the research aimed that faculty should use ICT mode and education technology is massively required at all levels of education.

(Mohamad, S. N. M., Salam, S., & Bakar, N 2014) incorporated 79 lectures on Interactive teaching materials which is helpful in pandemic situation these days. It focuses on more teaching and learning innovation that is specifically designed and created creatively by educators. By using the Online Multiple Intelligence Teaching Tools by educators help in better communication and provides variety of interesting activities for students. Specific tools such as verbal-linguistic intelligence, the proposed activities are Word Games Maker, Online Quiz Maker and Word Cloud Maker, Interactive Diagram Generator, Presentation Tools and Mind Map Maker are identified which is helpful in students learning. Mean and standard deviation tool has been used to find out the motivation level on various statements.

(Azlim, M., Amran, M., & Rusli, M. R. 2015) studies the concept of Educational technology in enhancing the teaching practices of 39 respondents out of 54 in a community college in Malaysia emphasizing computer self-efficacy; accessibility of the educational technology; technical support in utilizing the educational technology; and support from administration to be the key factors. A structured questionnaire was distributed taking into account mean values and generalizations were drawn which depicted that the administrator of the institution encourages lecturers to utilize the educational technology in their teaching practices. (Douglas, F. 2016) The report on Equality and Diversity in Learning and Teaching in Higher Education: Summary of papers from Equality Challenge Unit and Higher Education Academy joint conferences highlights the reviews on different researches which inculcated the importance of Equality and Diversity in Learning and different factors were incorporated to study the concept of Equality, Diversity and Inclusivity.

(Sahito, Z., & Vaisanen, P. 2017) proposed to acquire a greater understanding of TEs-perception, experience, skills and attitudes to job, job satisfaction and ICT. The study incorporated is based on thematic analysis and has approached 7E'S such as Expertise in use of windows programmes, security measures, hardware instruments, use of internet, creating accounts, installation of softwares, and use of softwares.



(Sahay, S., & Dawson, K. 2019) focused on technology driven teaching and learning process through Rogers' Innovation-Decision Process (IDP) model. The survey was carried among 191 teachers and conclusions were drawn on the basis of knowledge, attitudes, decisions and practice of ICT tools used in providing benefit to beneficiaries. The results revealed that the teachers had low level of technical knowledge.

(Medina-García, M. et al 2020). Provoked equal opportunities to all the people who want to seek higher education emphasizing three P's such as presence, participation, and progress for students. The study has been designed among 133 professionals and was concluded that there is positive effect of Inclusivity. The results inculcated strategic decisions among school environment.

(Szromek, A. R., & Wolniak, R. 2020) advocated education and scientific process in relation to human development among polish researchers. Many statistical tools were applied to reach to conclusions which stated that scientific research depends upon many positive factors and negative factors that are involved in educational technology.

## **2. OBJECTIVES**

So in lieu of coming across so many things need arises to understand the objectives behind studying education technology. For different streams it could be different perspective. The major objectives are as follows:

- To study the effect of Education Technology on teaching fraternity.
- To study the effect of Education Technology on learning process of students.
- To suggest strategies related to Equality, Diversity and Inclusivity.

## **3. RESEARCH METHODOLOGY**

The study aims to determine the effect from the view point of teaching fraternity as well as from student's view point. For this purpose two questionnaires were designed taken from Technology-Enabled Learning Implementation Handbook by Adrian Kirkwood and Linda Price and were circulated electronically via Google link and responses were recorded.

**3.1 Techniques Applied** Within this scope Correlation and Regression Analysis along with ANOVA was applied to draw conclusions.

### **3.2 Samples and demographic features**

The population of this research consists of teaching faculty of various colleges and students and



the questionnaire was send to many emails and completed questionnaires came up to be 108 comprising of 36 teachers and 72 students. The teachers are from different faculties and are having different designations ranging from assistant professors to professor grade. Students are also from different faculties having different perceptions regarding education technology.

### 3.3 Scales

The different scales regarding education technology were gathered by using a 5- point Likert Scale ranging from 1 (strongly disagree) to 5 (strongly agree). Similarly the same 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) was used to measure the education technology and leaning process of students as well.

### 3.4 Statistical Package

The analysis has been done using SPSS (Statistical Package of Social Sciences) version 16.0.

### Data Analysis and Findings

This part has been divided from two perspectives i.e. Part I from teacher’s view point and Part II from student’s view point. The effect of educational technology in regard to equality, diversity and inclusivity from teacher and students perspective has been studied.

Part I- Figure 1- Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
1. Age(in years)	36	2	5	3.19	.822
2. Gender	36	1	2	1.75	.439
3. Qualification	36	1	3	1.36	.543
4. Designation	36	1	3	1.42	.554
5. Level of Experience	36	1	5	3.03	1.874
6. Faculty Association	36	1	5	2.97	1.320
Valid N (listwise)	36				

Figure 1- Descriptive Statistics shows the Mean and Standard Deviation from the dataset of teaching deviations minimum of .439 to maximum of 1.874.

Table I Reliability Statistics

Cronbach's Alpha	N of Items
.630	17

Table I shows the Reliability-- To check the consistency of reliability Cronbach’s alpha



coefficient was used from the view point of data collected from teachers in the study. It was found to be 0.630 which is acceptable.

Table II Anova

	Sum of Squares	df	Mean Square	F	Sig
Between People	122.935	35	3.512		
Within People					
BetweenItems	125.725	16	7.858	6.040	.000
Residual	728.510	560	1.301		
Total	854.235	576	1.483		
Total	977.170	611	1.599		

Table II ANOVA output table shows the significance of f- test is found to be .000 which is less than 0.05 which states that there is significant effect of education technology on teaching fraternity.

Table III Model Summary

Model	R	R Square	Adjusted Square	Std. Error of the Estimate
1	.799 <sup>a</sup>	.638	.334	.881

Table III shows the Model Summary. The value of R= .799 which is high and R Square=.334 which represents moderate correlation .

The regression line drawn after analyzing unstandardized coefficients is as follows:

$$Y = -4.096 + 1.535X_1 + .130X_2 + .121X_3 - .122X_4 + .318X_5 - .245X_6 - .477X_7 + .122X_8 - .539X_9 + .114X_{10} + .383X_{11} + .190X_{12} - .407X_{13} + .363X_{14} - .236X_{15} + .069X_{16}$$

a. Dependent Variable: 17. Education Technology helps in career or employment prospects in the long term.

Part II- Table IV Reliability Statistics



Cronbach's Alpha	N of Items
.779	15

Table IV shows the Reliability-- To check the consistency of reliability Cronbach's alpha coefficient was used from the view point of data collected from students in the study. It was found to be 0.779 which is acceptable.

Table V ANOVA<sup>a</sup>

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	29.514	14	2.108	5.203	.000 <sup>b</sup>
Residual	23.097	57	.405		
Total	52.611	71			

Table V ANOVA output table shows the significance of f- test is found to be .000 which is less than 0.05 which states that there is significant effect of education technology on learning process of students.

Table VI Model Summary<sup>b</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.749 <sup>a</sup>	.561	.453	.637	.561	5.203	14	57	.000

Table VI shows the Model Summary. The value of R= .749 which is high and R Square=.453 which represents moderate correlation.

The regression line drawn after analyzing unstandardized coefficients is as follows:

$$Y=1.068-0.60X1-0.025X2+.169X4+.451X5+.355X6-.155X7+.104X8-.379X9+.073X10+.126X11+.095 X12-.162X13-.027X14-.189X15$$

- a. Dependent Variable: 3. Education Technology helps in enhancing students' learning process.
- b. Predictors: (Constant), 1. Education technology is the need of the hour., 2. You have full awareness regarding various meeting apps such as webex, zoom, google meet etc. 13. You are facing health problems due to constant usage of phone or laptops while online teaching. ,





11. Education Technology creates fun learning environment in the class. , 7.It allows you to collaborate with others easily, both in and outside of the campus., 14. You prefer traditional method of teaching over online teaching. 8.Education Technology helps in receiving grades/marks from your lecturer via text message on your mobile phone., 4. Education Technology will help you understand the subject material more deeply, 9. You Use Web-conferencing or video chat to communicate/collaborate with other students in the course., 6.It will improve your IT/information management skills in general. 12. You are able to access cost of online teaching.,10. Education Technology makes you feel connected to teachers. 5. It motivates you to explore many topics that may not have seen before.6.

### **Strategies related to Equality, Diversity and Inclusivity.**

As per the New Education Policy 2020, various strategies have been designed to have Equality, Diversity and Inclusivity in various aspects. Gender equity, Pedagogical system, Girl education, Skilled Courses, Research at Graduation level, Community Participation is important avenues where government has been drawing attention. So in order to have strong, well built, massive education structure there should be inclusion of all avenues stated above in our education system. NEP 2020 has tried to create many funds for promotion of research at college and university level as government has been trying to incorporate all educational institutions to be at par with higher education institutions which are commonly known as universities or deemed universities. Moreover inclusion of these concepts brings about 360 degree change in society as well. As we all are in the technological era education is deemed to be the most critical area where things have to be worked out as the future of our country depends upon the younger generation who has been important part of our society.

## **4. RECOMMENDATIONS AND CONCLUSION**

Educational technology with reference to Equality, Diversity and Inclusivity has drawn all eyes upon the conceptual framework by the researchers. The paradigm shift in the educational technology has brought about changes in the professional learning and development which has been centric activity that insist for inclusive classroom setting. The learning environment created by the academicians has brought various pedagogies that are essential for today scenario. The curriculum endorsing ICT competencies has been recognized by the higher educational institutions and have implemented in diverse teaching and learning. In nutshell the concept of Equality, Diversity and Inclusivity has brought plethora of changes globally.

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