

A Study Of The Impact Of Digitalization On Higher Education In India

Dr. Priya Soni Khare & Dr. Jitendra Kumar

Department of Education
CMP College, University of Allahabad (A Central University)
Prayagraj, Uttar Pradesh, India

Abstract

In current scenario COVID-19 has challenged humans in many ways, with school and colleges shut the need to innovate model became an urgent necessity which lead us to wards an educational digital revolution. However in this sudden transformation it is crucial to understand the online readiness and challenges faced in education ecosystem. Online education today is just an optional arrangement due to pandemic since offline classes are suspended to maintain the safety of students and it can never take place of face to face teaching experience of a physical class, as in offline class personality of teacher his communication skill, body language his all have impact on students whereas online classes are not able to develop quality education, leadership and discipline.

Keywords: Digitalisation, Higher Education, Learning Outcomes, Open Educational Resource (OER)

Date of Submission: 02-06-2023

Date of Acceptance: 12-06-2023

I. Introduction

India is a large country with the population of 1.31 billion people and with this increasing population the use of technology has also increased in last few years. India stands as second most social site users, here there is a huge opportunity to grow in the field of digitalisation and bring most of it in use in various field like defence, education, business and much more. To transform India into digitally strong society and knowledge economy Prime Minister have introduced initiative like digital India. In current scenario COVID-19 has challenged humans in many ways, with school and colleges shut the need to innovate model became an urgent necessity which lead us to wards an educational digital revolution. However in this sudden transformation it is crucial to understand the online readiness and challenges faced in education ecosystem.

II. Justification of the Study

The open university UK researcher Dominic Orr Martin Weller and Rob Farrow in there paper on how is Digitalisation Affecting the Flexibility and Openness of Higher Education Provision? Results of a Global Survey Using a New Conceptual Model (2019) Here researcher explained about the conceptual model of OOFAT (open online flexible and technology) in which researcher looked over three criteria 1. Content: it consists of subject knowledge, learning and guidance. 2. Delivery: It consists of the quality of passing the content to students considering the factors like place, pace and timing. 3. Recognition: It consists of evaluating procedures which includes assignments test etc. And the two dimensions which are considered are flexibility: how easily they can change from physical to online mode or keep changing due to specific circumstances and openness: are there any limitations in the above mentioned criteria. For this research researchers created a survey to collect initial data based on the conceptual model and cases were taken from all types of higher education provider according to their geographic, ownership and organisational basis. Researcher's data set comprises of 150 respondents from 36 countries. For the conclusion part of the research suggested that mostly higher education institutions are experimenting with digitalization by using new technologies.

Trine Jensen wrote a paper (2018) on topic higher education in the digital era- the current state of transformation around the world in the digital era. Here researcher throws light on technological development as leading changes in higher education and society in unpredictable pace. in this study they found that there is lack of national financial support in higher education as national financial frameworks are in one of the important constrain in almost every region. Research also gave us the point that human factor is one of the obstacle in technological transformation as setting up a computer is easier and this thing can not function same in case of humans.

Dr Himanshu Rastogi (2019) in paper titled Digitalisation of education in India -An analysis studied over the factor responsible for the growth of digital education in India and analysed its effect on student's attitude and culture. Dr Rastogi concluded that digitalisation of education is our requirement and a system that is blend of traditional and modern way of teaching is needed.

Neelam Rani (2019) in paper titled digitalisation of higher education explained that digitalisation plays an important role is fast transmission of education. But at the same time challenges in this way is unpredictable and unspecified and the development of our higher education is dependent on the ways of dealing with these challenges.

After the review of the related studies; it is concluded that there is no authentic evidence to find the impact of technological based education at higher education level. Only few studies i.e. digitalization affecting the flexibility and openness of higher education; higher education in the digital era; Digitalisation of education in India -An analysis, and digitalisation of higher education; conducted on the related areas. So, investigators tried to conduct this research study.

Objectives of the Study

- To study the impact of digitalisation on higher education.
- To analyse the impact of digital education on the quality concerns in higher education.

Hypotheses of the Study

- There is no significant impact of digitalisation on higher education.
- There is no significant impact of digital education and quality concerns parameters of higher education.

Operational Definitions of Terms Used

Digitalisation: Use of Technology

Higher Education: Students pursuing undergraduate and post graduate courses

Learning Outcomes: Result after attending online classes

Open Education Resources: Accessible e-resources

Variables of the Study

The following variables were involved in the study:

Research Variables –

Independent Variable: Type of Institution, Area of Residence, Gender and Field of Study

Dependent Variable: Digitalisation

Population Variables –

Gender wise – Male, Female

Area wise – Rural, Urban

Stream wise – Science, Commerce & Humanities

Methodology of the Study

Survey method has been used to conduct this study.

Sample

In this study, Indian population is taken under consideration out of which 248 higher education students has been selected as a sample through *simple random sampling technique*.

Tool Used

A tool was constructed on the *Uses of Digital Technology in Higher Education*. It was based on the Likert 5 point scale. The following dimensions were considered in the Questionnaire:

Dimensions	Item No.
Online Education	1, 3, 9
Learning Outcome	2, 4, 5, 6, 7
Technology and Policy	11, 12, 13
Leadership and Discipline	14, 15
Open Educational Resource	8, 16, 17

Analysis of the Study

The data was analyzed on the following dimensions with the help of SPSS:

Table 1: Dimension-1 ‘Online Education’

Study Prospective		Gender		Area		Stream		
		Female	Male	Rural	Urban	Science	Humanities	Commerce
Item 1: Is it convenient for you to attend online classes than offline one?	Strongly Agree	30.83	26.56	28.37	28.97	30.06	24.66	33.33
	Agree	16.67	10.94	10.64	17.76	12.27	16.44	16.67
	Neutral	28.33	28.13	26.95	29.91	31.90	21.92	16.67
	Disagree	9.17	13.28	12.77	9.35	12.27	8.22	16.67
	Strongly Disagree	15.00	21.09	21.28	14.02	13.50	28.77	16.67
Item 3: Reduction in syllabus affected the quality of higher education	Strongly Agree	47.50	25.78	37.59	34.58	36.81	35.62	33.33
	Agree	17.50	21.09	14.89	25.23	19.63	20.55	8.33
	Neutral	20.00	22.66	19.86	23.36	20.25	21.92	33.33
	Disagree	5.00	7.81	4.96	8.41	4.91	9.59	8.33
	Strongly Disagree	10.00	22.66	22.70	8.41	18.40	12.33	16.67
Item 9: Does your institution provide you with MOOC programs?	Yes	50.00	44.53	44.68	50.47	44.79	52.05	50.00
	No	50.00	55.47	55.32	49.53	55.21	47.95	50.00

Table 2: Dimension-2 ‘Learning Outcome’

Study Prospective		Gender		Area		Stream		
		Female	Male	Rural	Urban	Science	Humanities	Commerce
Item 2: Teachers provide more resources in online classes than offline ones to clear the concept	Strongly Agree	28.33	25.78	29.08	24.30	28.83	24.66	16.67
	Agree	20.83	12.50	14.89	18.69	15.95	16.44	25.00
	Neutral	21.67	24.22	22.70	23.36	25.15	20.55	8.33
	Disagree	18.33	14.84	16.31	16.82	14.11	20.55	25.00
	Strongly Disagree	10.83	22.66	17.02	17.76	15.95	17.81	25.00
Item 4: Online assignment and online test are authentic.	Strongly Agree	33.33	25.00	29.79	28.04	26.38	36.99	16.67
	Agree	18.33	14.06	16.31	15.89	18.40	13.70	0.00
	Neutral	20.00	28.13	19.15	30.84	26.99	17.81	25.00
	Disagree	10.83	13.28	13.48	10.28	12.27	9.59	25.00
	Strongly Disagree	17.50	19.53	21.28	14.95	15.95	21.92	33.33
Item 5: Online test and assignment are just copy pasted.	Strongly Agree	35.00	25.78	34.04	25.23	28.83	30.14	50.00
	Agree	22.50	13.28	12.77	24.30	18.40	16.44	16.67
	Neutral	13.33	24.22	18.44	19.63	20.25	17.81	8.33
	Disagree	14.17	12.50	14.18	12.15	14.11	10.96	16.67
	Strongly Disagree	15.00	24.22	20.57	18.69	18.40	24.66	8.33
Item 6: Open book exam increases your thinking ability.	Strongly Agree	30.83	29.69	26.24	35.51	30.67	32.88	8.33
	Agree	11.67	19.53	14.89	16.82	15.95	15.07	16.67
	Neutral	20.83	17.97	17.02	22.43	19.63	16.44	33.33
	Disagree	15.83	10.16	7.80	10.28	13.50	10.96	16.67
	Strongly Disagree	20.83	22.66	11.35	14.95	20.25	24.66	25.00
Item 7: Online exams are less stressful and are good for your mental health than offline ones.	Strongly Agree	30.83	34.38	31.21	34.58	31.90	35.62	25.00
	Agree	12.50	19.53	16.31	15.89	17.79	10.96	25.00
	Neutral	17.50	14.84	10.64	23.36	14.11	20.55	16.67
	Disagree	6.67	10.16	9.22	7.48	8.59	8.22	8.33
	Strongly Disagree	32.50	21.09	32.62	18.69	27.61	24.66	25.00

Table 3: Dimension-3 ‘Technology and Policy’

Study Prospective		Gender		Area		Stream		
		Female	Male	Rural	Urban	Science	Humanities	Commerce
Item 11: Digitization of education means use of technology such as computer, mobile software etc in field of education	Strongly Agree	53.33	47.66	55.32	43.93	49.69	50.68	58.33
	Agree	21.67	21.09	14.18	30.84	23.93	15.07	25.00
	Neutral	12.50	18.75	15.60	15.89	14.11	20.55	8.33
	Disagree	7.50	4.69	4.96	7.48	6.75	5.48	0.00
	Strongly Disagree	5.00	7.81	9.93	1.87	5.52	8.22	8.33
Item 12: National education policy 2020 is focused on digital education.	Strongly Agree	45.00	33.59	44.68	31.78	39.88	38.36	33.33
	Agree	30.83	27.34	24.82	34.58	30.06	24.66	41.67
	Neutral	15.00	25.78	16.31	26.17	19.63	21.92	25.00
	Disagree	5.00	6.25	4.96	6.54	4.91	8.22	0.00
	Strongly Disagree	4.17	7.03	9.22	0.93	5.52	6.85	0.00
Item 13: Do we require any change in our nation education policy 2020 regarding digital education?	Strongly Agree	34.17	28.91	34.75	27.10	31.29	31.51	33.33
	Agree	25.00	29.69	24.11	31.78	30.67	21.92	16.67
	Neutral	25.00	22.66	19.15	29.91	20.25	27.40	50.00
	Disagree	5.83	8.59	7.80	6.54	7.98	6.85	0.00
	Strongly Disagree	10.00	10.16	14.18	4.67	9.82	12.33	0.00

Table 4: Dimension-4 ‘Leadership and Discipline’

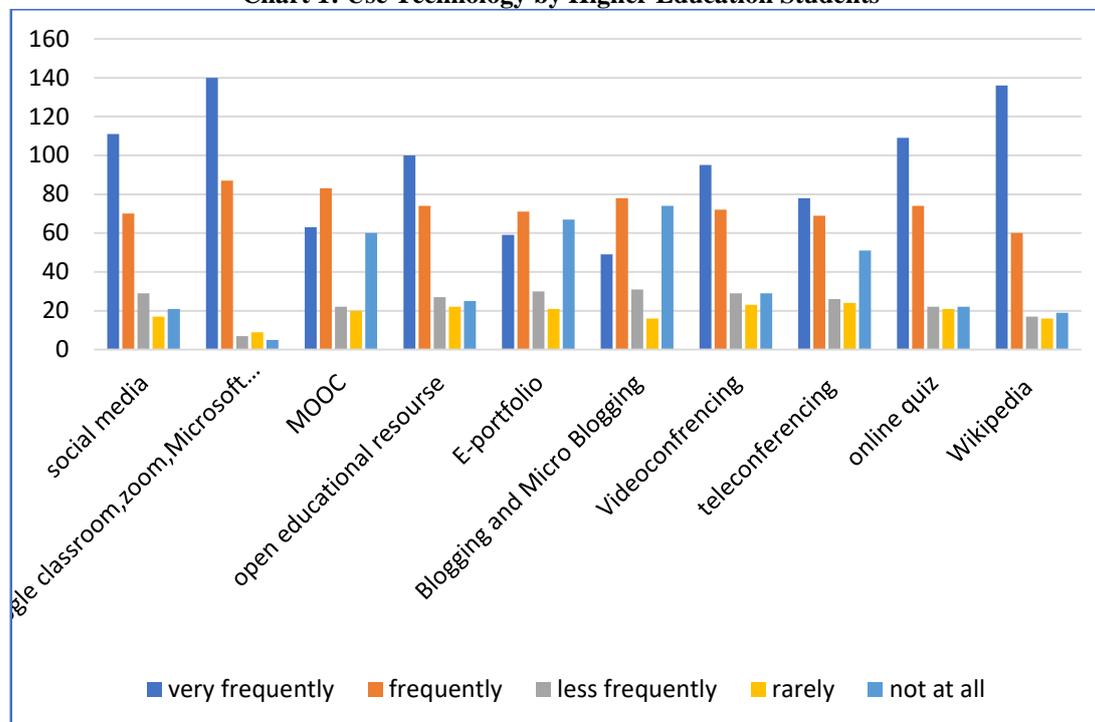
Study Prospective		Gender		Area		Stream		
		Female	Male	Rural	Urban	Science	Humanities	Commerce
Item 14: Online education is disturbing your daily healthy routine.	Strongly Agree	29.17	30.47	32.62	26.17	29.45	30.14	33.33
	Agree	16.67	18.75	14.89	21.50	17.18	16.44	33.33
	Neutral	15.00	19.53	16.31	18.69	19.02	12.33	25.00
	Disagree	10.00	9.38	9.93	9.35	7.98	13.70	8.33
	Strongly Disagree	29.17	21.88	26.24	24.30	26.38	27.40	0.00
Item 15: Now you have adapted/use to for the new routine due to online classes.	Strongly Agree	34.17	37.50	36.88	34.58	37.42	36.99	8.33
	Agree	26.67	31.25	26.95	31.78	30.06	24.66	41.67
	Neutral	23.33	17.97	19.15	22.43	20.86	16.44	41.67
	Disagree	1.67	7.81	4.26	5.61	4.91	5.48	0.00
	Strongly Disagree	14.17	5.47	12.77	5.61	6.75	16.44	8.33

Table 5: Dimension-5 ‘Open Educational Resources’

Study Prospective		Gender		Area		Stream		
		Female	Male	Rural	Urban	Science	Humanities	Commerce
Item 8: How many types E-Resources (pdf, ppts, online books, videos, websites, MOOCs etc.) you have used?	Less Than 5	32.50	28.13	36.17	22.43	27.61	36.99	25.00
	5-10	35.00	30.47	30.50	35.51	36.20	27.40	16.67
	10-15	12.50	15.63	12.06	16.82	11.04	17.81	33.33
	More Than 15	20.00	25.78	21.28	25.23	25.15	17.81	25.00
Item 10: Have you attended any online program?	Yes	75.00	69.53	67.38	78.50	71.78	71.23	83.33
	No	25.00	30.47	32.62	21.50	28.22	28.77	16.67
Item 16: Have you used any paid open resource?	Yes	38.33	40.63	34.75	45.79	57.06	34.25	25.00
	No	61.67	59.38	65.25	54.21	42.94	65.75	75.00
Item 17: Do open educational	Strongly Agree	25.00	42.19	35.46	31.78	36.20	28.77	33.33

resources enhance your knowledge than traditional ones?	Agree	24.17	18.75	18.44	25.23	20.25	21.92	33.33
	Neutral	33.33	21.09	27.66	26.17	26.99	27.40	25.00
	Disagree	10.00	7.81	6.38	12.15	6.75	13.70	8.33
	Strongly Disagree	7.50	10.16	12.06	4.67	9.82	8.22	0.00

Chart 1: Use Technology by Higher Education Students



Google classroom, Zoom, Microsoft Team and other such platforms are mostly use by students for online studies

III. Result and Discussions

Online Education

- Mostly higher education students find online classes easy to attend and also believe that reduction in syllabus has affected the quality of education.
- In terms of gender male higher education students gave somewhat equal response over the subject of reduction in syllabus whereas female higher education students strongly believe that quality is being affected due to syllabus reduction.
- MOOC programs are attended by 47.1774% of students.
- Both urban and rural students are easily able to attend online classes.
- Higher education students of humanities stream have attended more MOOC programs then science and commerce students.

Learning Outcome

- Mostly students get online teaching resources easily
- Higher education female students have opinion that online assignment and test are authentic whereas male are no sure about their opinion
- Higher education females students have mostly agreed that online test are just copy paste whereas male have neutral response towards this as well
- 30.24% students agreed with that statement that open book exams have increased their thinking abilities
- 32.66% students says open book examinations are less stress full for them
- Urban students say that open book examinations have increased their thinking abilities whereas rural students gave neutral response on this.

- Higher education students of commerce stream disagreed on the statement that online test and assignment are authentic whereas higher education of humanities stream agreed with the above statement and higher education students of science stream gave mix responses.
- Higher education students agreed on the statement that online exam is copy pasted.
- Higher education students of commerce stream gave neutral response for the statement that open book examination increases their thinking ability whereas higher education students of humanities and science have agreed to the statement above.
- Higher education students of commerce stream gave neutral response for the statement that open book examination are less stressful whereas higher education students of humanities and science have agreed to the statement above.

Technology and Policy

- 50.40% agreed that digitalisation of education means use of technology such as computer, mobile, software etc in field of education.
- Mostly students agreed on the statement that national education policy 2020 require certain changes.
- Rural students agree that there is a change required in national education policy whereas urban higher education students gave neutral response.

Leadership and Discipline

- Higher education students gave varied response for the statement that online education is disturbing their daily routine.
- Mostly higher education students have adapted the new routine due to online classes
- Higher education students of commerce stream gave varied response for the statement that that they have adapted new routine due to online classes.

Open Educational Resource

- Mostly higher education students have used between 5-10 e resources till now
- 72.18% higher education students have attended online programs
- 60.48% students haven't attended any paid open education resources
- Higher education male students agrees with statement that open education resources enhances their knowledge then traditional one whereas female HE students gave neutral response
- Mostly rural student used less than 5 open educational resources.
- Rural and urban both strongly agrees that open education resources enhances their knowledge then traditional one whereas female HE students gave neutral response
- Higher education students of commerce stream have mostly used 10-15 open education resources, students of humanities stream have mostly used less than 5 open education resources and students of science stream have mostly used 5-10 open education resources

Suggestions

On the behalf of this study; following are the suggestions:

- ✓ Awareness regarding MOOC programs is needed.
- ✓ Reduction in syllabus has affected the quality of education
- ✓ Online classes are convenient to attend
- ✓ In terms of access to the teaching resources online platform is more efficient
- ✓ Despite of considering online test and assignment authentic and reliable higher education students agreed that it is copy pasted.
- ✓ Open book exams are less stressful and have increased students thinking abilities
- ✓ Higher education students knows about the concept of digitalisation of education
- ✓ Higher education students are aware about national education policy and students agree that there are certain changes required.
- ✓ Higher education students are confused with the online education they are not able to figure out their daily routine in this online system
- ✓ Awareness regarding open education resources is required throughout but it is very much needed in rural areas.
- ✓ For study purposes open education resources should be in maximum used by students but it is not the in reality

IV. Conclusions

Online education today is just an optional arrangement due to pandemic since offline classes are suspended to maintain the safety of students and it can never take place of face to face teaching experience of an physical class, as in offline class personality of teacher his communication skill, body language his all have impact on students whereas online classes are not able to develop quality education, leadership and discipline.

References

- [1]. Stokov, A. A. (2020). Digitalization of education: problems and prospects. *Vestnik of Minin University*, 8 (2), 15.
- [2]. Frolova, E. V., Rogach, O. V., & Ryabova, T. M. (2020). Digitalization of Education in Modern Scientific Discourse: New Trends and Risks Analysis. *European Journal of Contemporary Education*, 9 (2), 313-336.
- [3]. Ally, M. (2008). The Impact of Technology on Education. *Education for a Digital World*, 57-66.
- [4]. Nickerson, R. S. (2013). Technology in education in 2020: Thinking about the not-distant future. In *Technology in Education* (pp. 19-28). Routledge.