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DIGITAL TRANSFORMATION CHALLENGES ACROSS EDUCATIONAL INSTITUTIONS POST COVID '19

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Introduction

Covid – 19 pandemics shown a significant impact across all sectors especially higher education institution sectors globally. This Covid-19 pandemic forced more schools and colleges to lockdown situation to avoid further spread among student and faculty community. To remain continuous touch with education more educational institutions transforming themselves towards digital capabilities. This pandemic taught everyone rapid adoption of digital technologies due to physical closure of campuses in continuously delivering quality education to students.

This pandemic allows millions of schools and colleges across globally to empower faculty irrelevant of their disciplines through real time learning solutions in order to sustain in education sectors. Various methodologies like webinars both conducting / organizing, digital training sessions and workshops help faculty to speed up their emerging needs through continuous learning platforms across various platforms. Management of every educational institutions encourage faculty members to make real-time communication with parents / guardians. Faculty have confidence in this new transition especially from chalkboards to digital screens allow them to feel comfortable, flexible and also feel secure to work under this new environment. All faculty putting their entire effort by working hard to give maximum output to their students even if their lives are disrupted.

Currently teaching pedagogies have completely changed which shown a tremendous cultural shift among faculty members and students across various educational sectors. Traditional teaching practices like face-to-face interaction in closed classroom currently integrate along with ICT [Information and communication technology] have extended their limits across various platforms through digital economy like Moodle and Google Class rooms.

All educational institutions across globally redesign service delivery by transforming themselves rich experience and mobilize collective action across various social status which includes age, demographics, socioeconomic status, employment status by leveraging technology which are accessible especially with rich content both for developed and undeveloped nations.

As we said earlier, digitalization today plays a key role across all educational institutions from schools to college across globally by transforming students and faculty from traditional learning and development. Even youth across all age groups irrespective of gender entering into information economy (Kozma 2011); even all educational institutions today enriching their curriculum structure and design by focusing more on advanced technological tools and digital resources where younger generation showing much interest which allows them more on creative and innovative.

Digital age younger generation requires faster adoption rate towards digital transformation through upskilling and cross skilling which allows them to innovate, program, make and build digital technology (Blikstein, 2013; Heeley & Damodaran, 2009; Marien & Prodnik, 2014).

Post Covid-19 create opportunity for various institutions / universities through digital transformation means by reframing their existing syllabus and curriculum design, making institutions to collaborate with cross functional domain platforms which allow faculty to improvise their skills through continuous learning and development by focusing more on internationalizing their institutions on par with the standards.

The recent developments of ICT especially on digital transformation culture turning all educational sectors towards teacher-centric education which helps both teacher and student through collaborative learning. Implementation of smart class rooms across institutions allows both faculty and student as close to a real, in-classroom experience.

Objectives of the Study

- To measure the self-efficacy of faculty and students due to digital transformation across educational institutions
- To examine various online educational platforms and tools used by faculty and students after and before Covid-19

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- To understand challenges faced by respondents in educational institutions post Covid-19

Review of Literature

Plenty of literature reviews conducted and analyzed by many research contributors on this pandemic Covid 19 infectious disease on educational institutions. More universities across the world postponed / cancelled all physical campus activities such as conferences, sports, workshop related activities. Even all universities make a change over from face to face to online delivery mode (Kawano S, 2009)

Recent developments of cloud platforms which allows student and faculty to learn from anywhere, anytime in any means and rhythm with synonym of words like web-based learning, blended learning, m-learning etc. (Cojocariu et al., 2014). Recently online education and learning come across various learning experiences among student and faculty through various digital devices like smart phones, laptops, tablets etc. with Wi-Fi devices with more flexibility where both faculty and student interact with real-time environment support (Singh & Thurman, 2019).

According to KPMG report more EdTech sectors take up boom around 2.5 billion approximately by Mid 2021 after this Covid-19 pandemic situation which helps students, faculty as well as the people who are having real interest in improvising their knowledge which includes a longer list especially Byju, Toppr, Unacademy, Coursera, GuruQ, Vedantu, SWAYAM portal initiated by Government of India, Jungroo Learning etc. (Brianna et al., 2019). All the above EdTech sectors provides much rich learning style experience both to students to faculty across globally by making autonomy decisions in terms of what they want to learn through methods like flashcards, adaptive spaced repetition and gamification etc.

Methodology

A total of 350 participants (296 women students (212) and faculty (84), and 54 men students(40) and faculty(14)) participated for this research study through online means where the author distributed through Google Forms working across various educational institutions and all the participants gave informed consent in completing the questionnaire regarding digital transformation challenges post Covid-19 issues. For this online survey 60% of the participants (both faculty and students) were from author's home institution, rest from other educational institutions via snowball sampling. As per demographic details of the respondents 87% were undergraduate students and faculty and 13% were postgraduate students and faculty.

This study administered using 25-item questionnaire which contains details regarding both students and faculty expectations, attitudes, transition level related to online learning on effect of digital transformation across educational institutions. In this study, to check internal consistency coefficients related to questionnaire items Cronbach's coefficient was calculated through pre-testing the questionnaire using pilot study and the results of reliability analysis showed that the items showed acceptable internal consistency (Cronbach's alpha = 0.89) which shows all the questionnaire items variables were appropriate to use.

Both faculty and students responded to some open-ended questions: "What you feel about blended learning environment – Will you like to continue in future" and "Expectations and student and faculty during online mode class". A total of 190 both faculty and student responded this question and results will be given in the next topic.

Self-Efficacy

Self-efficacy shows respondents potential and his/her capability to manage and adopt towards this digital transformation. Both faculty and students were prompted with self-efficacy question with five-point Likert scale where 5 – Highly satisfied, 4 – satisfied, 3 – Neutral, 2- Neither satisfied nor dissatisfied, 1 – Dissatisfied.

Self-efficacy of students

Item	n	M	SD	t	p-value
Assessing the course contents	252	2.15	1.13	11.58	**
Tests and Assignments	252	1.97	1.16	13.63	**
Synchronous/Asynchronous Communication	252	2.25	1.07	10.81	**
Knowledge of advanced Tools and Technology	252	3.30	1.11	4.20	**

*Significant at the $p < .05$ level, ** Significant at the $p < .001$ level.

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Using one-sample t-tests with a test value of 3 (neutral), the above table analyses self-efficacy of students reported a decrease in skills in three out of the four items: Assessing the course contents; tests and assignments; and synchronous / asynchronous communication with faculty; Only one item, knowledge of advanced tools and technology showed perceived improvement, $t(252) = 4.20$, $p < 0.001$.

Self-efficacy of faculty

Item	n	M	SD	t	p-value
Instructional strategy	98	2.65	1.08	5.06	**
Classroom Management	98	3.30	1.11	4.20	**
Use of Technology	98	2.51	1.04	7.34	**
Student Engagement	98	2.25	1.07	10.81	**

*Significant at the $p < .05$ level, ** Significant at the $p < .001$ level.

Using one-sample t-tests with a test value of 3 (neutral), the above table analyses self-efficacy of faculty reported a decrease in managing students two out of the four items: Instructional strategy; classroom management; use of technology; student engagement; Out of four items two items, instructional strategy and usage of technology shown tremendous improvement made by faculty members during this Covid-19 period $t(98) = 11.02$, $p < 0.001$.

Ease of use of digital technologies

This questionnaire item lists various digital transformation technologies where both faculty and students use for the purpose of educational level which considers easy to use without prior experience or continued use. Respondents were asked about usage of various online educational platforms and activities before and after lockdown initiated across country. It includes online educational platforms (Canvas, Google Classroom, Moodle, Blackboard); social media (Linkedin, Twitter, Instagram, Facebook); Communication tools (Teams, Zoom, Google Docs, EdPuzzle); synchronous class sessions (Live Stream, YouTube). In this study respondents were asked to rate five-point scale where 5 = Very frequently; and 1= Never. Both faculty and students reported there may be tremendous increase in usage of technologies after lockdown compared to before, $t(329) = 18.65$, $p < 0.001$.

Challenges in digital transformation faced by faculty and students

Item	n	M	SD	t	p-value
Productive at home is difficult	323	2.69	1.08	8.06	**
Technical difficulties with online teaching tools	323	3.42	1.07	5.20	**
Setting and forgetting online learning activities	323	3.51	1.10	6.29	**
Distraction and Time Management	323	2.96	1.09	7.89	**
Understand course expectation	323	2.23	1.10	8.32	**

*Significant at the $p < .05$ level, ** Significant at the $p < .001$ level.

From the above table analysis, respondents felt there has been complete work pressure and mental stress both for faculty and students because of online education. Only one item, distraction and time management vital challenges focused both by faculty and students $t(323) = 7.89$, $p < 0.001$.

Results

As per open-ended Questionnaire Item Q23 the results shown - Dramatic improvements need to be undertaken over the next coming years in educational institutions after this Covid-19 pandemic impact. Blended learning environment need to arise and it is going to be a reality where classroom will be migrated towards online coursework. Physical means of attending classes by the students will be become free in coming over years and they feel that they study at their own pace and also allows faculty to speed up the teaching and learning process.

As per Questionnaire Item Q24 - Faculty training in online environment will be different hands of experience for them. They need to be comfortable with the newer technology scale up and they ready to adopt and be in a position to switch between online and


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offline mode of teaching the academic curriculum to their students. They feel more empowered to deliver and newer mode of lecture to their students than before.

Students' expectations from faculty during online mode class as per Question Q18 - In class room teaching faculty facial expression, their voice and body language considered as most important teaching tool. After the shift of online teaching, the above said teaching tools become restricted through online screen only voice modulation alone considered and to be fully functioning. It is must for the faculty members to slow down their voice and allow students to capture key knowledge points.

In case of online teaching faculty have less control over their students since they likely skip the class. It requires faculty to make the students through live interactions by giving more creative and innovative assignments through active learning environment which is outside of class so that they himself voluntarily show interest in attending online classes. And also getting feedback from them enhance the quality level in attending classes.

Conclusion

These pandemic balances both positives and negatives impressions towards digital transformation in educational sectors which give rise a new beginning leaving old traditional teaching style practices. The above-mentioned challenges quoted on this paper is not an end it still grows and grows with multifaceted look making future generation to leapfrog into more equitable and sustainable modes of learning. Every educational institution needs to experiment themselves by deploying new tools and technology to make education available to all of their students who may not able to come campus.

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