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RESEARCH PAPER

Online Transformation of Learning during Covid-19 at Higher Education Institutions

[1]Qudsia Fatima*   [2]Shumaila Mahmood   [3]Huma Lodhi

1. Assistant Professor, University of Education, Lahore, Punjab, Pakistan
2. Assistant Professor, University of Education, Lahore, Punjab, Pakistan
3. Assistant Professor, University of Education, Lahore, Punjab, Pakistan

PAPER INFO	ABSTRACT
*Corresponding Author: qudsia.fatima@ ue.edu.pk	The objective of this study was to see how the shift from conventional to online teaching effected classroom environment which overall linked with academic performance of students. Data were collected from students of B. Ed Hons from semester six who learned through online mode. Purposive sampling technique was used to select the sample. Descriptive method was used and a questionnaire at 5 point likert scale was used to know the students' perceptions during transition from traditional to online mode. Study findings shows that students were not ready to receive online education due to inefficient use of technological facilities. A significant effect of online teaching was seen on students' learning at higher education level during COVID-19. This has been recommended that online teaching needs more practicable and reasonable other than COVID days as well so as to make students ready to be used to meet odd situation for learning.

Introduction

COVID 19 is a disease which is caused by coronavirus spread through Wuhan city of China. It was declared as a pandemic by WHO (World Health Organization) in 2020. In the middle of March 2020 many countries had implemented travel restrictions, stay at home orders, following SOPs and closure of schools, colleges and universities. Its impact was huge on not only for the economies of the world but educational institutions were also severely affected. Teaching and learning were suddenly shifted from face to face to online mode.

As the world has totally transformed at all aspects including teaching and learning. Online teaching has great impact on students' learning where teachers become physically separated from their students. During online mode both teachers and students modified their practices of teaching and learning making it reflective and open. Although students have to face various challenges faced during digital mode but it also created ease in terms of less time consuming assessment, expertise in technology usage, less cost of transportation, skill of sharing content, flexible classroom structure, and availability of web conferencing applications for live sessions. Literature showed that in 186 countries of the world (after the closure of schools) 1,198,530,172 students affected due to COVID-19 (UNESCO, 2020). An international public health emergency was declared by World Health Organization (WHO) on January 31, 2020 (WHO, 2020). A review of recent study found that people believe COVID-19 as a cause for threat, anxiety and uncertainty (Ling & Ho, 2020).

The COVID crisis has changed how students receive education. At the same time students explore opportunities to learn new ways of learning realizing the significance of

the use of technology in the teaching-learning process suggested by Fang and his colleagues (Fang et al., 2019). Generally, students found online mode of learning to be a positive experience.

Literature Review

Online learning during pandemic is the redesigning the course content and assessment. For instance formative and summative examinations in some universities have been changed into take-home examination as alternate formative and summative assessment strategy (Mustafa & Abu Karim, 2020). It is not entirely a new innovation but it keeps students under less pressure and anxiety as well as reduced the problems of internet connectivity. In this way they also learned the patterns of new way of assessment through flexible timings of assessment. Similarly, due to new online mode as a shift of educational paradigm applied to blended learning and online learning through massive open online courses (MOOCs) or micro-credentials.

In the beginning, most of the teaching staff was not well-equipped with online teaching methods. They were forced to adapt to change due to pandemic. So they were forced to adopt various teaching strategies in their online classes. Teachers can improve online teaching by improving their digital literacy skills, similarly students can also learn new ways of learning they never know before and trained with a wide range of educational philosophies (Korkmaz & Toraman, 2020).

In today's world online learning has become more productive which helps students to keep safe from pandemic situation of Covid-19 (Sia & Adamu, 2020). Learners can access the online content at their own pace and time. It allows geographical reach from remote locations. It is a cost-effective which is quite affordable and enhances communication between educators and students. It accommodated more learners at the same time, reduces travelling cost and prevented institutions in facing delays in its annual academic calendar during lockdown.

Along with various benefits of online learning, not all children have the necessary knowledge, skills and resources to keep themselves aware of the strategies of learning during online sessions. Among many challenges of online learning, learners who have limited access to technology are less able to engage in online teaching-learning environment (Crawford et al., 2020). The also feel difficulty for having updated devices they need for their online class. A recent study shows the need for readiness of academic institutes of almost all countries to transform face to face classes into online mode during the pandemic period (Basilaia & Kvavadze, 2020), which helps to reduce the source of spread of COVID-19 by following SOPs.
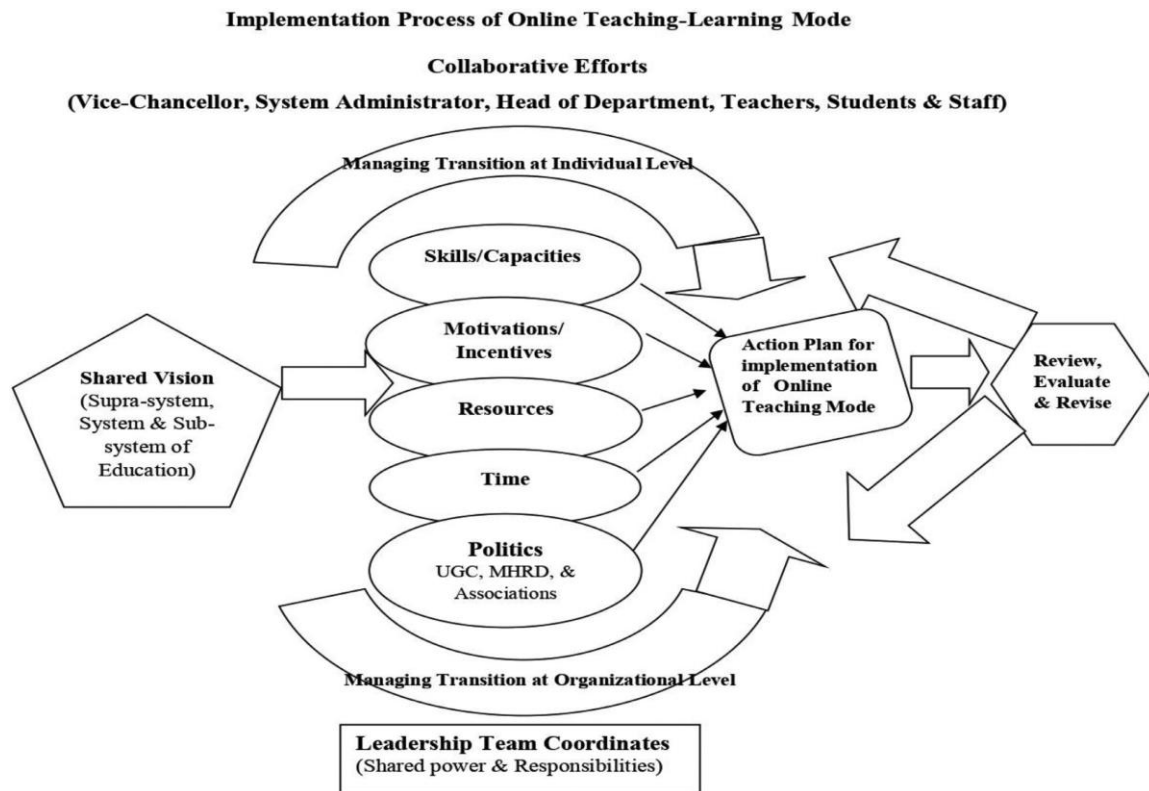
This study has given further insights that how we can continue teaching learning processes in critical phase as this pandemic has badly affected teaching learning patterns. However, the aftermath will have to bear as physical classroom environment is not available to students.

Either in a physical or virtual class room, coordination is important for appropriate teaching and learning. Conferencing services are available for arranging online sessions such as Zoom, MS-team, Skype, Team and Google meet. Similarly, students and teachers can use online white boards, and social media channels such as WhatsApp, face book, linked in, Instagram live, loom and you tube channels.

Students' formative and summative evaluation can be done through online quizzes and in the form of assignments that are a perfect way to review their success whether online or even in a classroom environment. Google docs, google forms and other modes are

being used for evaluating students' performance. Link of google forms is sent to students by the teachers. Students open the form by clicking the link. They complete their assessment and submit the form.

Implementation process of online teaching and learning mode

Implementation Process of Online Teaching-Learning Mode

Collaborative Efforts

(Vice-Chancellor, System Administrator, Head of Department, Teachers, Students & Staff)

Material and Methods

This study employed a quantitative survey. Data were collected through google forms to collect responses from students of B.Ed. (Hons.) in their third and fifth semesters. Due to closure of institutions and difficulty in accessing the students, this study employed purposive sampling under non probability sampling method. After getting email addresses questionnaires were sent to students. Students' perceptions were taken to understand the effect on their learning during pandemic. Through purposive sampling technique students of BED Hons were selected as sample.

Questionnaire was designed on the constructs, namely learning styles, motivation of learn, performances during online classes as well as difficulties, problems and challenges. At first, data were collected from students in their third semester just after they stopped face to face learning due to pandemic. Data were collected again from same students when they reached at fifth semester (after ten months). All this was done to collect data from only those students who attended online classes at least two times to get true and accurate pictures of situations.

Population

Population of the study included all the students of third and fifth semesters of BED Hons from Public sector universities of Lahore during pandemic period.

Sample and Sampling Technique

Purposive sampling technique was used to select sample due to the crisis and closure of universities for physical data collection. The sample of this study included the 84 students who attended online classes during COVID-19 at higher education institutions from two universities of Lahore. Data were collected twice from same students to know their perceptions at two stages of online learning during pandemic.

Instruments

Questionnaire was based on five-point scale to know the perceptions of students about online learning during COVID-19 at higher education institutions. Only students' views and perceptions were measured in this survey.

Results and Discussion

Researcher chose a quantitative research approach for the analysis because it's the most suitable method of data collection during the time and resource constraints. Chi square test was performed to examine the online transmission of learning during COVID 19. Chi square is particularly useful for this type of comparison. Table 1 shows that out of the six statements five statements showed significant difference and one insignificant.

Table 1
Perception of students about online learning

Teaching Strategy	Semester	N	Frequencies (Percentages)					$\bar{x}$	χ^2	p	Cramer's V
			Strongly disagree N (%)	disagree N (%)	Neutral-times N (%)	Rarely N (%)	Never N (%)				
Motivation to learn	Third	84	7	31	11	12	21	3.11	33.73	.000	.45
	Fifth	84	5	19	31	24	5	3.15			
Internet connectivity issues	Third	84	13	25	14	13	17	2.95	30.31	.000	.43
	Fifth	84	5	19	33	22	5	3.13			
Forced to learn	Third	84	12	27	10	13	19	2.96	37.0	.000	.47
	Fifth	84	2	19	35	24	5	3.15			
Superior to face to face instruction	Third	84	12	25	15	14	16	2.96	27.94	.18	.41
	Fifth	84	5	17	37	20	5	2.14			
Full of problems	Third	84	12	27	10	13	19	2.93	37.00	.000	.47
	Fifth	84	1	19	35	24	5	3.10			
Useful during critical conditions	Third	84	13	26	10	13	20	3.16	37.26	.06	.47
	Fifth	84	1	19	34	25	5	3.17			

Table 1 shows the students' perceptions about the use of online classes during COVID19. It can be seen from table that there is difference in the perspective of students of third and fifth semesters. Students of third semester were not comfortable with online learning process. After 10 months when those students were at the end of fifth semester, they showed acceptance of online learning with all its problems and obstacles. Therefore, significant difference can be seen in the perspective of students at two phases of data collection in terms of motivation for learning which they developed at second phase, χ^2 (4, *N*=84) = 33.73, *p*<.001 . No significance difference was found in terms of internet issues faced by students of third and fifth semester, χ^2 (4, N=84) = 30.31, p<.001. No significance difference was found in students' perception which showed that they forced to learn. There is significant association between students of third and fifth semester that online learning is not superior to face to face instruction, χ^2 (4, N=84) = 27.94, p= .18. Their perspective was also changed in terms of problems faced during online instruction, χ^2 (4, N=84) = 37.00, p<.001 and they accepted it necessary during critical conditions, χ^2 (4, N=84)= 37.00, p< .001 . Values of Cramers' V in all statements indicates that difference is strong in students' perceptions in their third and fifth semesters.

Table 2
Perception of students about online learning

Teaching Strategy	Semester	N	Strongly disagree N (%)	disagree N (%)	Neutral N (%)	Rarely N (%)	Never N (%)	x̄	χ^2	p	Cramer's V
Variety of teaching strategies	Third	84	13	25	14	13	17	2.95	28.18	.000	.41
	Fifth	84	2	18	36	23	5	3.13			
Availability of audio visual aids	Third	84	12	27	10	13	20	3.02	36.83	.000	.47
	Fifth	84	1	19	35	24	5	3.15			
Access to online lectures	Third	84	12	27	10	13	20	3.02	36.89	.000	.47
	Fifth	84	1	19	35	24	5	3.15			
Same capability to receive online instruction	Third	84	13	24	15	13	17	2.96	27.07	.000	.40
	Fifth	84	2	18	37	22	5	3.12			
Apprehensive about online learning	Third	84	10	26	16	13	17	3.0122	23.66	.000	.37
	Fifth	84	2	18	35	24	5	3.14			
Enough skills to manage online learning	Third	84	14	25	12	12	17	2.91	34.10	.000	.45
	Fifth	84	1	19	38	20	5	3.11			

Table 2 shows results of χ^2 and Cramer's V statistics at .05 level of significance to indicate the significance of difference. All the six statements on online transformation during COVID 19 showed significant difference in terms of students' perceptions. There is significant difference for the use of variety of teaching strategies, χ^2 (4, *N*=84), 28.18, *p*< .001, availability of audio visual aids, χ^2 (4, N=84)= 36.83, p< .001 as well as access to online lectures, χ^2 (4, N=84)= 36.89, *p*<.001. Students also responded that gradually their capability to receive online instruction is improved, χ^2 (4, N=84) = 27.07, *p*<.001. Similarly, significant difference was found on the responses of students that they were anxious during online instruction at the start but at second phase of data collection they were feeling easy and comfortable, χ^2 (4, *N*=84)= 23.66, *p*<.001. Students were of the view that they had not enough skills of online learning at the beginning but when they reached at fifth semester they were able to manage the online learning independently, χ^2 (4, N=84)= 34.10,p<.001. Cramer's V in all statements indicated higher level of difference in students' responses.

Table 3
Perception of students about online learning

Teaching Strategy	Semester	N	Strongly disagree N (%)	disagree N (%)	Neutral-times N (%)	Rarely N (%)	Never N (%)	x̄	χ^2	p	Cramer's V
Evaluation of own learning	Third	84	7	32	10	13	20	3.09	33.95	.000	.45
	Fifth	84	1	19	35	24	5	3.15			
Questioning during online classes	Third	84	14	24	12	14	18	2.98	34.09	.000	.45
	Fifth	84	1	19	38	21	5	3.12			
Ability to achieve learning goals	Third	84	11	28	10	13	20	3.04	34.54	.000	.46
	Fifth	84	2	18	35	24	5	3.14			
No difference between online and conventional learning	Third	84	11	27	11	13	20	3.05	34.50	.000	.46
	Fifth	84	1	19	35	24	5	3.15			
Comfortable while communicating electronically	Third	84	9	30	11	12	20	3.05	35.40	.000	.46
	Fifth	84	0	20	38	20	6	3.14			
Face to face learning is necessary	Third	84	6	32	11	13	20	3.11	30.69	.000	.43
	Fifth	84	2	18	35	24	5	3.14			

Results of chi square test shows that significant difference was found in terms of students' responses in all the six statements. There is significant difference in the perspectives of students about the evaluation of their own learning. Students of fifth semester were more able to evaluate their learning as compared to students of third semester, χ^2 (4, *N*= 84)=33.95, *p*<.001. Significant difference was seen which was in favor of students of fifth semester about asking online questions, χ^2 (4, *N*=84)= 34.09, *p*<.001.

Data analysis revealed that students of fifth semester have high ability to achieve learning goal as compared to students of third semester, χ^2 (4, N=84)= 34.54, p<.001. Significant difference was found between the perspectives of students about online and traditional learning, χ^2 (4, N= 84)= 34.50, p<.001. Similarly, significant difference was found when these students reached at fifth semester for communicating electronically, χ^2 (4, N=84)= 35.50, p<.001. However, they feel that face to face learning is necessary χ^2 (4, N=84) = 30.69, p<.001. Values of Cramer's V reported strong difference between the responses of students on two stages of data collection.

Online learning has converted an educational institute into a home institute. This study presents how online learning affected students' achievement during pandemic. As the data were collected at two phases from the same students, significance difference was seen in their perceptions about online learning during pandemic. Students at first phase were not feeling comfortable during online learning. They faced lot of problems including sharing power point presentations, you tube videos, submitting assignments which affected their achievement. Although this was not easy for students and teachers to have knowledge and skills that are required during online learning but with the passage of time they were capable to digest use of technology during learning. Findings showed that use of technology allows students to become more active learners than passive receivers. Results are consistent with Candy, Crebert and O'leary (1994) who discussed that due to the use of technology students become active participants.

Findings revealed that during online learning students were confused initially but with the passage of time they had enough skills to learn and understand through variety of teaching strategies, resources and with improved capability to receive online instruction meaningful and engaging for them. Likewise, teachers make their lessons interactive for students to receive online instruction. Moreover, they were apprehensive and conscious about online leaning and got enough skills to manage it. With the passage of time students were comfortable in using online tools, consistent with Korkmaz and Toraman (2020) who found that teachers use strategies that they never used before to make their lesson effective.

Data obtained is consistent based on the analysis of university students who became satisfied with online learning in second phase of data collection. Students equipped with online learning by improving their digital literacy skills, design online learning content and trained with a wide range of educational philosophies, consistent with Korkmaz and Toraman, 2020; Amir et al., 2020.

Findings revealed that students were reluctant initially during online mode. They were not highly motivated by considering it rigorous thing but with the passage of time they got motivated to learn. Similarly, they were not in favor of online learning prioritizing face to face learning but they found useful with passage of time considering it useful during crises. This finding is consistent with Crawford et. al. (2020) who discussed that due to technology usage and connectivity issues students were reluctant and confused to use it. They consider it a tedious activity which they were not familiar before.

Data revealed that students were gradually capable to evaluate their own learning. They started asking relevant questions and were more comfortable by communicating electronically. They don't feel reluctant to ask questions during online classes and they were capable to achieve their learning goals through this mode. They were so habitual to receive this online mode that after 10 months they realized that there is no big difference between face to face and online learning. However, they were in favor of face to face learning, coherent with the work of Paul and Jefferson (2019) who reported no significant difference in the student achievement during online and physical mode. They concluded that students' performance was not affected by medium whether face to face or online.

Present study confirmed that students who are least competent in using technology or have low resources for the use of technology have lower academic performance than those who use technology. However, they found online mode useful during critical conditions. Findings of Fang et al., (2019); Omari and Salameh (2012); and Saini (2014) shared these facts too. Less resourced institutions and having students with low economic status have limited access to technology which adversely effect on students' ability to engage in online teaching-learning environment (Crowford et al., 2020).

The findings of the study showed that learners face internet connectivity issues. Due to connectivity problems this they cannot smoothly continue their online classes. This finding is coherent with a recent study conducted by Chung et al. (2020) during the COVID-19 pandemic. According to the results of Chung's research, most of the students do not want to attend their classes using online learning due to many reasons including connectivity problems and understanding of the content of courses teaching online. Likewise, students found various problems and issues during online learning because they were not so resourceful to purchase devices, therefore, it was full of problems at the beginning.

Conclusion

This study sought to explore the perceptions of students about online transformation of learning at the times of COVID 19. By analyzing the data, it is concluded that online transformation of learning during COVID 19 at higher level is not easy for students. They were confused and depressed by the sudden change because of implementation of online mode. As time passed they overcame the issues and challenges and started enjoying online classes.

Through the usage of the online learning, teachers of higher education institutions need to boost their inquiry to improve their learning performance. Students need guidance to achieve their learning goals. The new online teaching philosophy has to be promoted to shift the new norm of online education instead of traditional one. This can be obtained by application of blended, hybrid and online learning at higher education institutions.

Recommendations

This study digs out the prevailing online learning practices during the pandemic era. Following are the recommendations of the study:

1. Students may be assisted by teachers through practice sessions during online learning processes to make the change acceptable for students.

2. Higher education institutions should develop a pathway for students to achieve their goals during this critical period. Prospective teachers should be equipped with latest skills including digital literacy and creating content for classroom learning.

3. Future educators may equip themselves to learn new strategies of assessment in the form of online and take-home examination.

References

Al-Omari, A.A. & Salameh, K.M. (2012). E-learning versus traditional learning as perceived by undergraduate students in Jordanian universities, *E–Learning and Digital Media*, 9(2), 223-231

Brooks, S.K., Webster, R.K., Smith, L.E., Woodland, L., Wessely, S., Greenberg, N. & Rubin, G. J. (2020). *The psychological impact of quarantine and how to reduce it: rapid review of the evidence*, The Lancet, doi: 10.1016/ S0140-6736(20)30460-8.

Basilaia, G. & Kvavadze, D. (2020). Transition to online education in schools during a sars-cov-2 coronavirus (covid-19) pandemic in Georgia, *pedagogical research*, 5(4), 1-9

Candy, P.C., Crebert, G. & O' leary, J. (1994). *Developing lifelong learners through undergraduate education, national board of employment, education and training*, Australian Government Publishing Service, Canberra.

Covid, C. D. C., Team, R., COVID, C., Team, R., Bialek, S., Boundy, E., & Sauber-Schatz, E. (2020). Severe outcomes among patients with coronavirus disease 2019 (COVID-19)—United States, *Morbidity and mortality weekly report*, *69*(12), 343.

Crawford, J., Butler-Henderson, K., Rudolph, J., Malkawi, B., Glowatz, M., burton, R., Magni, p.a. & lam, s. (2020), covid-19: 20 countries' higher education intra-period digital pedagogy response, *Journal of Applied Learning and Teaching*, 3(1)1-20, http://doi.org/ 10.37074/jalt. 2020.3.1.7.

Chung, E., Subramaniam, G. & Dass, L.C. (2020). Online learning readiness among university students in Malaysia amidst COVID-19", *Asian Journal of University Education,* 16(2)46-58.

Gautam, K. K., & Gautam, P. K. (2020). Transition to online higher education during covid-19 pandemic: turmoil and way forward to developing country-Nepal. https://doi.org/10.21203/rs.3.rs-59206/v1

Korkmaz, G. & Toraman, C. (2020). Are we ready for the post-covid-19 educational practice? An investigation into what educators think as to online learning, I*nternational Journal of Technology in Education and Science*, 4(4)293-309.

Paul, J., & Jefferson, F. (2019). A Comparative Analysis Of Student Performance In An Online Vs. Face-To-Face Environmental Science Course From 2009 To 2016. *Frontiers In Computer Science*, 7.

Sia, J. K. M., & Adamu, A. A. (2020). *Facing the Unknown: Pandemic And Higher Education In Malaysia*. Asian Education And Development Studies, WHO