

## IMPACT OF ONLINE CLASSES ON DEGRADING KNOWLEDGE ACQUISITION

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### ABSTRACT

Knowledge empowerment enlightens every country's literacy growth. Nowadays online teaching is method adapted to bridge a gap between student and teacher. Technology has taken a big leap by getting student and teacher on one platform. But in online training knowledge transfer degrades when it comes to mass training. Basically student's psychological behavior definitely varies when it comes to online training and on premise training. On premise environments or face to face, mold's each student's personality by conducting various activities wherein online doesn't give that much activity scope for mass. Methodology used is in two phases. Phase 1, is the sample size is 110, respondents are students from different parts of India. Questionnaire were disseminated via Google form, after review incomplete questionnaires are not included, out of which 99 students respondents replied, so final 99 questionnaires are used for research. In Phase 2, 40 respondents are taken for the study. Under graduate Respondents were chosen by using convenient sampling. The main aim is to study Student's attentiveness, concentration degrades in online class.

**Keywords:** OnlineClass, Attentive, Interactive, knowledge and COVID-19.

### Introduction

Online classes or training are laborious but not impactful in terms of the knowledge transfer, when it comes to mass training. For impactful knowledge empowerment, student number should be such that teacher is feasible to give one on one attention. According to RTE (The Right of children to free and compulsory Education Act, 2009) Student teacher Ratio at Primary level of schooling is 30 : 1 and at secondary level of schooling is 35 : 1. Considering the surrounding factors of online training the ratio should be reduced down to 10:1 and 15: 1 respectively. Mass Teaching should be reduced to one-to-one teaching. This will increase the job opportunities for teachers. Student teacher Ratio at Primary level of schooling is 10:1, secondary level of schooling is 15 : 1 and Under graduate level 25:1. With this ratio there will be more demand for teacher jobs, ratio will be maintained and knowledge transfer will be done efficiently.

The Pandemic outbreak led to sudden shift of work conditions from physical to remote working. From all sectors such as manufacturing, service sector, Agriculture, financial services, the educational field is also not an exception to this. The teaching learning processes have been shifted to virtual platforms immediately after the announcement of the lockdown. All went helter skelter. Students from the Institution were asked to live to their home town, for their safety. It's been very challenging for the Institutions and Universities to cope with the unexpected scenario. It's been also more challenging for the teachers to deliver the contents effectively as it is to be done in physical classes. The challenges were faced right from the availability of infrastructure, like PCs, laptops, internet connection, its speed. Secondly, content creation in the form of PPTs and other relevant study material for facilitating the online sessions. Thirdly, the most important challenge is that which has been noticed that was, engagement of the students in online sessions. The current paper has been an attempt to identify the challenges faced while imparting online sessions and how it affects the quality of knowledge transfer and acquisition. It was challenging for the students also. Some were not having smart phones, laptops, it was very essential to have these Information Technology Communication tools physically. The Internet connection was essential part of the online teaching, so was the electricity. The scope of study covers undergraduate students. Primary data has been collected from 110 respondents from Pune. The variable under study covers their psychological framework, their behavioural patterns, their attention span, on the contrary effectiveness of online teaching, the imparting skills of the teacher, the teaching pedagogy. The engagement capacity and skills of the

teacher are also important. On the basis of primary data analysis, the paper concludes by presenting the specific solutions for imparting effective online sessions and without affecting the quality of knowledge acquisition by the students during the Covid-19 period of Pandemic.

### Literature Review

(Arkorful , Abaidoo, 2014) gives focus on, online is versatile when problems with time and which place are taken into account. By making it simple to access a vast amount of information, e-learning improves the effectiveness of knowledge and degrees through the usage of discussion forums to gather huge amount of information. The discussion forums will help to provide opportunities for between the students. Focusing on E-learning is cost benefit. E-learning aids in making up for a lack of academic staff, which are instructors, teachers, facilitators, lab technicians etc. e-learning provides for self-pacing, E-learning as a teaching approach causes the learners to experience reflection, distance and lack of interaction with teachers and classmates. The e-learning approach may be less effective than the traditional approach to learning when we need to clarify our doubts, explanations and interpretations. E-learning as a method may have a negative impact on learners' ability to improve their communication skills. Although the students may have good academic knowledge, they might not have the necessary abilities to impart their information to others. It will be difficult, if not impossible, to control or regulate negative behaviors like cheating as exams for assessments in e-learning may be completed through a proxy. E-learning may also be susceptible to piracy and plagiarism due to poor selection skills and the simplicity of copying and pasting. Additionally not all academic disciplines or fields can use the e-learning method. It is impossible to study using e-learning the pure scientific fields that include practice. Researchers found out that Social science and humanities this stream can be best suited for e-learning than professions requiring the development of practical skills like medicine and pharmacy. E-learning may cause some websites to become overloaded or experience high usage. The unexpected time was spent and cost beneficial may result.

(Mukhtar, Javed, Arooj, &Sethi, 2020) this case study gives opinion on results that the benefits of remote learning included comfort and accessibility, while the drawbacks included inefficiency and the challenge of upholding academic integrity. The suggestions include teaching staff to use online modalities and make lesson plans with fewer burdens and more interactivity. The author adds that his study encourage the adoption of online education in medical and dental institutions. Online learning platforms support student-centered learning and are simple to control in a lockdown situation. The benefits as per the faculty, online learning helped assure distant learning, was manageable, provided students with easy access to instructors and learning resources. It cut down on other costs and the use of travel resources. The responsibility of the administrative staff like recording lectures and recording attendance were made easier. Online learning according to students and professors, had promoted student centeredness during the lockdown. The student was now a self-directed learner who could take classes at any moment during the day asynchronously. Limitations were that students said that faculty members were limited to teaching and evaluating knowledge, but students were unable to learn practical and clinical work using online learning modalities. Teachers were unable to evaluate students understanding during online lectures since there was no rapid feedback. The students mentioned the resource intensive nature of online learning as well as their short attention span as limitations. Teachers reported that while doing online instruction, students misbehaved and attempted to use online resources when having continuous evaluation in the class.

(Mohalik , Sahoo, 2020) found that the recommendations for the teachers preparation for the class and education. As per the study almost all students own a smart phone or laptop, but they do not have a home with a reliable source of electricity, with proper band width or proper room for online class. Therefore the government should take steps to provide constant power supply and Internet access so, that student and teachers can benefit from online learning. The majority of student and instructors are lacking in digital literacy that is crucial for effective online teaching and learning. Colleges and universities must provide students an online learning orientation program. In order for students to learn more effectively during this pandemic, it is the need to get acquainted with various online learning resources like NDL. The teacher's community, administrative authorities now has a clear path to follow in order to effectively continue teaching and learning activities online, because many students agreed for online education and desire to continue their education online. An essential factor in online learning is the lack of technological pedagogical content understanding among the majority of faculties. So, that they can successfully trained take online classes, effectively. Government and educational institutions take into consideration for bringing about improvements to boost online learning in the long run.

(Tang, et al., 2022) found that students were dissatisfied with online learning and the type of interactions, way of communication and Question and Answer session they had with their teachers during the online class in the pandemic situation. (Kulal,Nayak, 2020) adds to the body of knowledge that more advantages of online education include its ability to close the literacy gap in rural areas.(Bordoloi, Das, & Das, 2021) found that one

of the concerns for students in rural areas is their smart phones, laptops and network problems make things worse for students as well as teachers. Online classes need a learner-centered atmosphere where students must be self-motivated, self-directed, in contrast to traditional classroom learning where students are pin pointed that they are being spoon fed. Colleges or the Government must frequently bring training and development program to faculties and students in order to accomplish this goal. The study also demonstrated that e-learning will play a bigger role in future but cannot take place of conventional face to face classroom instruction.

(Glazier,Harris, 2020) found that evidence from Student Surveysshow that compassion and enthusiasm from the instructor mattered more for face-to-face students than other common characteristics of the best online and in person classes. A lack of instructor engagement seems to affect the worst online classes more than it comes to the worst face-to-face classes but positive engagement doesn't cause a student to choose an online class as the best over a face to face class. In conclusion, online courses are not necessarily inferior or more difficult for students to enjoy than traditional courses. (Dinh,Nguyen, 2020) in their study show results that practice and student-student interaction were the areas for which students expressed the least happiness, while they were happy with pedagogy and teacher-student interaction received the highest rating. (Fergusson, 2022) adds that some problems were considered in work based learning in informal, non-formal, formal learning the competencies and capabilities were taken into consideration. Pedagogies of learning are important in learning. (Zancajo, Verger, Bolea, 2022) has made the analysis in three areas of response – the development of teachers, educational inequality and the digitization of the educational system. (Akhter, Mahmood) found that the major online education with information technology literacy, student's creativity, motivation of students via learning and the performance was studied. He added to improve online technology and have better distance learning environment that can detect a learner's degree of motivation which get connected accordingly to the learning. (Castelli, Sarvary, 2020) found that none of the students switch on their cameras while the online classes are going on, due to poor internet facility, appearance, background of the place. Engage students in active learning, and use surveys to understand their challenges through surveys, in between certain puzzles can be given to keep them prompt and take interest in the subject.

**Objectives of the study**

1. To study Student's attentiveness, concentration degrades in online class.
2. To study the discipline behavior in student reduces.
3. To find out that student is not exposed to any other in person communication.

**Methodology**

Methodology used for Phase 1, is the sample size is 110, respondents are students from different parts of India. Questionnaire were disseminated via Google form, after review incomplete questionnaires were not included, out of which 99 students respondents replied, so final 99 questionnaires are used for research. Phase 2, 40 Respondents, belonged to a varied set of demographics in terms of gender. Respondents were chosen by using convenient sampling.

Set of questions in the first Phase 1. Questions were framed in Google form. Questions were textual unstructured. Based on Phase 1 Questionnaire Set of questions was drafted in Phase 2. 40 valid responses were selected for the study.

Roll no	Name	Do online classes degrade knowledge acquisition?	If yes, give reasons	If no, give reasons	What changes are required to make online classes effective?
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Table 1. Set of Questions in Phase 1

Based on Phase 1 Questionnaire Set of questions was drafted in Phase 2. Certain parameters were generated and identified from phase 1 Questionnaire. 40 valid responses were selected for the study.

**Hypothesis**

H1: Online classes degrade knowledge Acquisition.

Sr.No./Group	Abbreviation	Details
1	AC	Attentiveness and Concentration
2	IC	Interactive Communication
3	ES	Environment and Setup

**Data Analysis**

Table 2. Group of Abbreviation Details

Sr. No.	Details	Group
1	Online classes are not so active	2
2	No practical knowledge. So it is sometimes difficult to understand the point to concept.	1
3	It's not as effective as physical classes. You don't get the feel of studying something and moreover feels like watching a video.	3
4	Doubt clearance opportunities are less.	2
5	Understanding level of students, become very low.	1
6	Technical problems	3
7	Exhausting to sit in front of a screen, causing stress to eyes and health	3
8	Due to online class there is lack of Interaction between student and teacher.	2
9	Face to face communication is lacking	3
10	Lack of personal attention	1
11	Students have difficulty in asking doubts online	2
12	Classroom environment can never be created in an online platform.	3
13	Mental fatigue	1
14	No. discussion with Classmates	2
15	45 minutes lecture is long time.	1
16	Interaction with teacher gets restricted.	2
17	Disturbance at home	1
18	Learning from childhood in offline mode so bit habitual of that.	3
19	Home school is not adopted for academic level, Peer learning is almost impossible	3

Table 3.GroupWise Reasons

Sr.No	ACy	ICy	ESy
1	3.6	3.3	3.8
2	4.6	4.0	4.7
3	4.2	3.8	4.5
4	4.0	4.0	3.7
5	3.4	3.0	3.5
6	3.6	2.0	4.7
7	3.0	2.3	3.7
8	4.2	4.2	4.7
9	4.0	4.0	4.8
10	3.4	3.0	3.7
11	3.2	2.2	4.0
12	4.0	3.5	4.5
13	5.0	4.8	5.0
14	3.2	4.0	4.2
15	4.2	4.3	4.2
16	3.6	3.3	4.0
17	2.8	1.8	2.5
18	3.4	2.3	3.8
19	3.0	3.0	3.0
20	4.0	3.7	3.5
21	5.0	5.0	4.8
22	4.2	3.5	3.7
23	4.4	4.5	4.5
24	3.4	3.2	3.3
25	4.2	4.0	5.0
26	2.8	3.0	3.3
27	3.0	3.0	3.0
28	4.2	4.3	4.5
29	2.8	2.5	2.7
30	4.0	3.7	3.8

31	2.6	1.8	3.5
32	3.4	2.3	3.5
33	2.8	2.2	3.5
34	3.8	3.7	4.2
35	2.0	2.8	2.5
36	4.8	4.2	5.0
37	4.6	4.3	4.5
38	3.6	3.8	3.3
39	4.0	4.0	4.0
40	2.8	2.2	3.2

Table 4. Mean of Dependent and Independent variables.

Cases						
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
ACy	40	100.0%	0	0.0%	40	100.0%
ICy	40	100.0%	0	0.0%	40	100.0%
ECy	40	100.0%	0	0.0%	40	100.0%

Table 5. Case processing summary

Tests of Normality						
	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
ACy	.130	40	.084	.974	40	.466
ICy	.127	40	.105	.954	40	.105
ECy	.128	40	.096	.961	40	.181

Table 6. Tests of Normality

**Normally distributed Likert Scale**

As all the p-value(sig) > 0.05

**Parametric Method**

**1. Linear Regression**

**2. Pearson correlation**

Interactive Communication – dependent variable

Attentiveness & Concentration – Independent variable

Environment & Setup – Independent variable

**Linear Regression**

Variables Entered/Removed (a)			
Model	Variables Entered	Variables Removed	Method
1	ESy, ACy (b)		Enter

(a) Dependent Variable : ICy  
(b) All requested variables entered

Table 7. Regression

Model Summary (b)						
Model	R	R Square	Adjusted Square	R	Std.Error of the Estimate	Durbin Watson
1	.834 (a)	.695	.678		.4909	1.541

(a) Predictors : (Constant), ESy, ACy  
(b) Dependent Variable : ICy

Table 8. Regression Model Summary

**R:** This is the Pearson correlation coefficient(r) which describes the strength and direction of linear the connection between two or more variables. The R-value of 0.834 shows that the three variables have a high and positive correlation.

**R-squared:** The coefficient determination is used to evaluate the model’s explanatory power or its goodness of fit. Value of 0.695 shows that about 69.5% changes in IC, is explained by ES and AC jointly, while 30.5% is captured by the error term. This shows that the model has good fit.

**Adjusted R-squared:** Value of 0.678 shows that about 67.8% changes in IC, is explained by ES and AC jointly, while 32.2% is which the error term detects. This demonstrates the model’s good fit.

**Durbin-Watson (DW) Statistics:** measure the residuals autocorrelation evidence. The range of permissible autocorrelation for DW is between 1.45 to 2.44.

Thus, the fitted regression line result and the DW statistic value of 1.541, there is no evidence of autocorrelation.

Model	Sum of Squares	df	Mean Square	F	Sig.
1. Regression	20.298	2	10.149	42.115	.000 (b)
Residual	8.916	37	.241		
Total	29.214	39			

(a) Dependent Variable : ICy  
(b) Predictors : (Constant), ESy, ACy

Table 9. ANOVA

Model	Unstandardized Coefficients		standardized Coefficients		t	Sig.	Collinearity Tolerance	Statistics VIF
	B	Std. Error	Beta					
(Constant)	-.257	.456			-.563	.577		
ACy	1.139	.199	.926		5.725	.000	.315	3.175
ESy	-.144	.202	-.115		-.713	.480	.315	3.175

Dependent Variable : ICy

Table 10. Coefficients (a)

**ANOVA:**

The result confirms the significance of the data for the entire regression model and this was captured by the ANOVA (F-statistic) value of 44.115 and its corresponding similarity ratio of 0.000b(F = 42.115, p<0.05), that at 5% level was found to be noteworthy.

**Regression Coefficients:**

The AC coefficient value of 1.139, an increase in AC, causes an increased in IC by 1.139 units. The ES coefficient value of -0.114, indicates that, on the average, a unit increase in ES, decreased IC by 0.114 units.

**T-statistics and p-value:**

**AC:** With p-value of 0.000, the calculated t-value for the association between AC and IC is provided as 5.725. Conclusion that AC has a favorable and substantial impact on IC because the p-values is less than 0.05 at the 5% threshold of significance.

**ES:** The calculated t-value for the association in ES and IC is given as -0.713 with an associated p-value of 0.480. We draw the conclusion that ES has a positive and significant impact on IC because the p-value is less than 0.05 at the 5% threshold of significance.

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	ACy	ESy
1	1	2.975	1.000	.00	.00	.00
	2	.020	12.218	.96	.12	.05
	3	.005	23.264	.03	.88	.95

(a) Dependent Variable : ICy

Table 11. Collinearity Diagnostics (a)

	Minimum	Maximum	Mean	Std.Deviation	N
Predicted Value	1.662	4.749	3.363	.7214	40
Residual	-1.1688	1.2150	.0000	.4781	40
Std. Predicted Value	-2.357	1.922	.000	1.000	40
Std. Residual	-2.381	2.475	.000	.974	40
(a) Dependent Variable : ICy					

Table 12. Residuals Statistics (a)

### Co linearity Diagnostics:

Tolerance and Variance Inflation Factor (VIF) are two values provided. Tolerance is an indicator for how much variability of the specified independent variables is not explained by the other independent variables in the model.

If this value is very small (less than 0.10), it shows that there is a strong correlation between the many variables, raising the risk of multicollinearity.

VIF: The VIF is just the inverse of the Tolerance value (1 divided by Tolerance). VIF values above 10 would be a concern here, indicating multicollinearity. The commonly used cut-off points for determining the presence of multicollinearity are tolerance value of less than 0.10, or a VIF value of above 10. Since the tolerance for each independent variable is 0.315, which is greater than or equal to 0.10, the multicollinearity assumption has not been broken. The VIF value, which is 3.175, and much below the cut-off of 10, supports this as well.

### Findings

1. 50% students are happy with the way the classes were conducted in Pandemic. There is strong relation between all variables.
2. Due to environment and setup of online class students lack concentration.
3. 69.5% changes in Interactive Communication, is explained by Environment and Setup. Students are not able to meet their fellow class students and make face to face discussions.
4. 67.8% changes in Interactive Communication, is explained by Attentiveness and Concentration. In online class the discipline behavior in the students is less.

### Conclusion

Better interaction between teacher and student via quizzes, games and puzzles make learning interesting by giving real life examples. Use of latest technologies, using of writing pads & proper smart class setups, not to share PPT and PDFs on screen during classes, teacher can have setup the camera in front of Black/white board, will be very effective. Water breaks are required during online classes. 50% students, way of thinking is best way to be effective in academics is to make offline classes. All this care should be considered, yes, online classes degrade knowledge acquisition.

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