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A Study Of Effectiveness Of Online Academic Engagement On Undergraduate Students During Covid - 19

Assistant Professor Sumita Joshi:
Program Head BBA – SOM UG; MIT-WPU, Pune
Assistant Professor Mugdha Paranjape:
Faculty BBA –IB – SOM UG; MIT-WPU, Pune

Abstract

The World Health Organization (WHO) declared Novel Coronavirus Disease (COVID-19) outbreak as a pandemic on 11th March 2020 and reiterated the call for countries to take immediate actions and scale up the response to treat, detect and reduce spread to save lives of the people. (https://www.who.int, n.d.) Since the onset of the COVID-19 pandemic in India, almost all streams are experiencing significant changes in the working pattern. The education industry is not an exception. The way the college students and parents have been thinking in this pandemic situation has seen a paradigm shift. However, this tough period is full of challenges for the teachers as well as students. It is now of utmost importance to understand and learn a dynamic shift from offline mode to the online mode of teaching and learning process. However, the researcher feels that the retention of the students is significantly low as compared to face-to-face interaction or lecture method in the classroom. In this study, the researchers would try to validate the effectiveness of online academic engagement on undergraduate students.

Keywords: *Classroom teaching, COVID -19, Digital Platform, Online Academic Engagement, Undergraduate Students.*

1. Introduction:

Academic engagement of students is widely recognized as a significant stimulus and also a current buzzword in higher education. (Kahu, 2013) Online teaching-learning offers equal challenges and opportunities to promote students' academic engagement and learning. Academic engagement of students is a multifaceted phenomenon from psychological, social, cultural perspectives. The pandemic of Covid-19 has posed a serious challenge for all educational institutions. Especially in India, the lockdown started around March 2020 which was in the middle of the semester. The teachers, students as well parents came under tremendous pressure. The strict lockdown during pandemic results in the inability of universities and colleges to have students on the campus. The pandemic has completely changed the landscape of academic offerings. The overall experience of teaching and learning on the campus and co-curricular activities came to a complete halt. This pandemic has been a crisis in a true sense. The pandemic reduced the ability of the educational institutions to communicate with the students and suddenly brought the university or college experience to "online academic engagement of the students." In the beginning, shifting from classroom platform to the digital platform was a big challenge for the students as well as teachers. In the current scenario, (Mishra et al., 2020) online education became a pedagogical shift from the traditional method to the modern approach of teaching-learning from classroom to Zoom, from personal to virtual and from seminars to webinars**.** In this research paper, researchers have a primary focus to know the effectiveness of Online Academic Engagement on Undergraduate students of MIT -World Peace University, Pune. To evaluate the feasibility of online engagement in the future, the researchers attempt to understand students' perceptions regarding online academic engagement through a questionnaire.

2. Review of Literature:

(Kahu, 2013) mentioned academic engagement of students as an "individual psychological state" that comprises of behavior and thought process of the students. Academic engagement of students is a two-way process that involves educational institutions i.e. colleges and universities as well as the students.

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(V, 2004) The experts pointed out that engagement is more than participation or involvement by identifying three dimensions to students' engagement namely emotional, behavioral and cognitive engagement. One can participate positively or negatively. Academic engagement of students is an interaction between the time, efforts and other relevant resources capitalized by the students as well as educational institutions (Universities and Colleges) to enhance students' experience and also learning outcomes resulting in the development of students, their performance and reputation of the University or College.

(Zilvinskis et al., 2017) as per the National Survey of Academic engagement of students, the USA **(**NSSE) website specified that academic engagement of students is "the amount of time and effort students put into their studies and other educationally purposeful activities and how institution deploys its resources and organizes the curriculum and other learning prospects enabling students to participate in academic activities."

The need for defining and ensuring quality in the process of designing and delivering online learning is an essential issue for higher education institutions worldwide (Herrington, 2016). The study (Chen et al., 2010), based on data linked to the National Survey of Academic engagement of students (NSSE) in the United States, revealed that there is a positive relationship between the use of technology-based learning, academic engagement of students and learning outcomes. (Krause and Coates 2008) quotes that academic engagement of students refers to the commitment and effort that students give to their learning. The research reveals that the level of academic challenge, the interaction between the faculty and students; a supportive campus environment and sound infrastructure are the key factor influencing online academic engagement. For any innovative changes, external and internal forces are held responsible as discussed by Lewin (1958) in the three-step process (unfreezing → changing → refreezing) which defines the integral process of any change. (Mishra et al., 2020). Unfreezing of traditional teaching-learning occurred during unforeseen circumstances out of COVID-19, which brought to the shift into online teaching because of anticipated uncertainties in pursuing the traditional mode. Today, it is quite impossible to take classes in regular mode during the COVID-19 outbreak in which to maintain the social distancing is of supreme importance; hence certainly online teaching mode became a necessity that brought an organization and individual both in unfreeze phase. (Siegal et al., 1996)(Mishra et al., 2020). However, research also demonstrates that online learning is not without limitations. It has been observed that the retention for online courses is usually reported as significantly lower than the courses where instruction occurs face-to-face. (Dietz-Uhler et al. 2007) . It is very well known that the technical problems or connectivity issues with online learning environments may cause students to drop out or have reduced commitment to their studies (Jaggars, 2014).

3. Objectives of the study:

1. To find out the various forms of online teaching-learning modes adopted during the COVID-19 pandemic.
2. To study the perceptions of undergraduate students related to online academic engagement during the COVID-19 pandemic.
3. To examine the difficulties faced by undergraduate students in adapting to the online academic engagement during the COVID-19 pandemic.

4. Research Methodology:

4.1 Research Context:

In this research, the researchers attempt to study the perception of students towards online teaching pedagogy. After the lockdown was declared, there was a sudden swing from classroom teaching to online teaching with the help of various digital platforms. At the very beginning, the Zoom platform was widely used by most of the faculty members to engage in online teaching sessions. The students were well informed about their weekly online timetable via what's app groups and on ERP. Also, the students were instructed to download the Zoom application on their laptops or smartphones. As the shift from offline to online teaching was totally a new experience, initially there was a learning curve experienced by the students as well as faculty members. Eventually, the academic sessions were streamlined on the digital platforms. From

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the perspective of research, the researchers felt that there is a need to evaluate the perception of students towards the effectiveness of online academic engagement.

4.2 Sampling:

The survey was targeted to include first-year students of the Bachelor of Business Administration – International Business program (BBA – IB) of MIT World Peace University, Pune. The primary data was collected through the questionnaires. This survey was conducted to evaluate the effectiveness of online teaching in the mid-term i.e. April 2020. To get the responses, a google form was created and the link was shared with all FYBBA- IB students. The responses for the questionnaire were collected during the first week and second week of April 2020. The questionnaire was divided into three sections such as pre-session information, during sessions and post-session feedback. The questionnaire was shared with 227 students who were attending online lectures delivered by the same faculty members who used to conduct classroom sessions. Out of 227 students, 194 students i.e., 71.32% responded to the survey and were found eligible for further analysis. *(n=194)*

4.3 Research Methodology:

Researchers did the statistical analysis using MS Excel. The analysis of Quantitative Data was expressed using percentages. The Chi-Square test was used to find the association between the perspective of students towards online teaching, content delivery and effectiveness of online academic engagement.

5. Results:

5.1 Statistical analysis: Effectiveness of online academic engagement on UG students

		n = 194	***Percentage***
Pre-Session: Timely information about online academic engagement during an outbreak of COVID 19.	Yes No	176 022	90.7% 09.3%
Communicating the schedule of Online Academic sessions in advance.	Yes No	160 034	82.0% 18.0%
Information regarding the platform to be used for Online Academic Sessions.	Yes No	175 019	90.2% 09.8%
During the session: The digital platform was used for delivering online lectures	Zoom Webex Impartus Google Classroom	193 0 0 0 1	99.5% 0 0 0 0.05%
The preferred device for accessing and attending online academic sessions.	Smartphone Laptop I-Pad Desktop	101 81 10 2	52.1% 41.8% 5.2% 1%
Receiving timely invitation links for daily sessions.	Yes No	165 29	85.1% 14.9%
Effectiveness of online sessions in terms of content delivery	Excellent Very Good Good Average Poor	6 21 60 78 29	3.1% 10.8% 30.9% 40.2% 14.9%
The clarity in concepts while solving and sharing numerical problems online as compared to classroom sessions.	Excellent Very Good Good	4 21 47	2.1% 10.8% 24.2%

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	Average	68	35.1%
	Poor	54	27.8%
Effectiveness of Share Screen facility for clarity in theoretical subjects as compared to classroom sessions.	Excellent	9	4.6%
	Very Good	30	15.5%
	Good	68	35.1%
	Average	55	28.4%
	Poor	32	16.5%
Frequency of interruption or content loss due to connectivity issues during the academic session.	Always	71	36.6%
	Sometimes	121	62.4%
	Never	2	1%
The audio quality of online teaching sessions.	Excellent	9	4.6%
	Very Good	18	9.3%
	Good	74	38.1%
	Average	70	36.1%
	Poor	23	11.9%
Effectiveness of understanding the concepts during an ongoing session.	Very Less	23	11.9%
	Less	74	38.1%
	Most of it	89	45.9%
	All of it	8	4.1%
Duration of lecture to cover the topic.	Sufficient	112	57.7%
	Not sufficient	82	42.3%
Post Sessions: Opportunity to clarify doubts if any during or after the sessions.	Yes	168	86.6%
	No	26	13.4%
The method used to clarify the doubts.	Verbal	93	47.9%
	Chatbox Hand raise	48	24.7%
	Arrangement of Separate sessions	28	14.4%
		25	12.9%
Scheduling additional query solving sessions and connect with the concerned subject teacher.	Yes	130	67%
	No	64	33%
Provision of additional study material, video links and presentations by the subject teacher to understand the contents in depth.	Always	48	24.7%
	Sometimes	113	58.2%
	Never	33	17%
Effectiveness of additional learning material to create interest and learn more things related to a particular topic or unit.	Yes	106	54.6%
	No	88	45.4%
Enhancement in writing skills by solving the assignments from an exam point of view.	Yes	86	44.3%
	No	108	55.7%
Overall rating of continuous evaluation pattern implemented in the form of assignments, case lets, numerical questions etc.	Excellent	12	6.2%
	Very Good	38	19.6%
	Good	70	36.1%
	Average	48	24.7%
	Poor	26	13.4%
Overall Online Academic Engagement experience	Excellent	5	2.6%
	Very Good	22	11.3%

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	Good Average Poor	71 64 32	36.6% 33% 16.5%
Effectiveness of Online Academic Engagement experience	Effective Not Effective	129 65	66.5% 33.5%
Can online teaching be replaced by classroom sessions?	Yes No	75 119	38.7% 61.3%
The overall experience of online students' academic engagement.	Yes No	86 108	44.3% 55.7%

Table 5.1: Statistical analysis: Effectiveness of online academic engagement on UG students

5.2 Testing of Hypothesis:

Based on the data of various factors of the respondents, hypothesis testing was done by the researcher and following is the discussion and outcome of various research problems discussed by researchers.

Hypothesis 1: Students' perspective regarding the effectiveness of their online academic engagement.

To test the above hypothesis statistically, it has been reframed as follows;

Null hypothesis H0: There is no association between students' perspective regarding online academic engagement and effectiveness of their online academic engagement i.e. the two variables namely perspective regarding online engagement and online academic engagement being effective are independent.

Alternate hypothesis H1: There is an association between students' perspective regarding online academic engagement and effectiveness of their online academic engagement i.e. the two variables namely perspective regarding online engagement and online academic engagement being effective are dependent.

Chi-Square Test: The hypothesis is tested by using the Chi-Square test.

Observed Frequency

O_{ij}	**Online academic engagement of students was effective**		
Online engagement rating	**No**	**Yes**	**Total**
Good	36	126	**162**
Poor	29	3	**32**
Total	**65**	**129**	**194**

Table 5.2.1 Observed Frequency by using the Chi-Square test.

Where O_{ij} is the observed frequency count for the i^{th} row and j^{th} column of the categorical variable.

Expected Frequency

E_{ij}	**Online academic engagement of students was effective**		
Online engagement rating	**No**	**Yes**	**Total**
Good	116.91	45.09	162.00
Poor	23.09	8.91	32.00
Total	**140.00**	**54.00**	**194.00**

Table 5.2.2 Expected Frequency by using the Chi-Square test

Where, E_{ij}= is the expected frequency count for the i^{th} row and j^{th} column of the categorical variable = Sum (i^{th} row) * Sum (j^{th} column)/N and N is the total.

Test Statistic χ^2 is as follows;

Test statistic = $\chi^2 = \Sigma [(O_{ij} - E_{ij})^2 / E_i]$

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$(Oij-Eij)^2/Ej$	Online academic engagement of students was effective		
Online engagement rating	**No**	**Yes**	**Total**
Good	55.99	145.17	201.16
Poor	1.51	3.92	5.43
Total	**57.50**	**149.08**	**206.59**

Table 5.2.3 Test Statistics by using the Chi-Square test

Chi sq. observed = 206.59
Chi sq. table value (1, 0.05) = 3.841
Conclusion
As chi-square observed value is greater than chi sq. table value we reject H0 i.e. namely student's perspective regarding online academic engagement and finding the online academic engagement effective are dependent which means there does exist a relationship between the student's perspective regarding online academic engagement and finding the same effective.
Hence, it is concluded that students found online academic engagement effective during COVID 19.

Hypothesis 2: Online teaching methods have influenced the online academic engagement of students

To test the above hypothesis statistically, it has been reframed as follows;
Null hypothesis H0: There is no influence of online teaching methods (online sessions in terms of content delivery) on the online engagement of students i.e. the two variables namely online sessions and students' perspective regarding the effectiveness of online teaching are independent.
Alternate hypothesis H1: There is influence of online teaching methods (online sessions in terms of content delivery) on the online engagement of students i.e. the two variables namely online sessions and students' perspective regarding the effectiveness of online teaching are dependent.
Chi-Square Test: The hypothesis is tested by using the Chi-Square test.

Observed Frequency

O_{ij}	Online academic engagement of students was effective		
Online session effective in terms of Content delivery	**No**	**Yes**	**Total**
Yes	38	127	**165**
No	27	2	**29**
Total	**65**	**129**	**194**

Table 5.2.4 Observed Frequency by using the Chi-Square test

Where, O_{ij} is the observed frequency count for the i^{th} row and j^{th} column of the categorical variable.

Expected Frequency

E_{ij}	Online academic engagement of students was effective		
Online session effective in terms of Content delivery	**No**	**Yes**	**Total**
Good	119.07	45.93	165.00
Poor	20.93	8.07	29.00
Total	**140.00**	**54.00**	**194.00**

Table 5.2.5 Expected Frequency by using the Chi-Square test

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Where, E_{ij}= is the expected frequency count for the i^{th} row and j^{th} column of the categorical variable = Sum (i^{th} row) * Sum (j^{th} column)/N and N is the total.

Test Statistic χ^2 is as follows;

Test statistic = $\chi^2 = \Sigma [(O_{ij} - E_{ij})^2 / E_i]$

$(Oij-Eij)^2/Ej$	**Online academic engagement of students was effective**		
Online session effective in terms of Content delivery	**No**	**Yes**	**Total**
Good	55.20	143.11	198.31
Poor	1.76	4.57	6.33
Total	56.96	147.68	**204.64**

Table 5.2.6 Test Statistics by using the Chi-Square test

Chi sq. observed = 204.64

Chi sq. table value (1, 0.05) = 3.841

Conclusion

As chi-square observed is greater than chi sq. table value we reject H0 i.e. namely online sessions in terms of content delivery and students' perspective regarding the effectiveness of online teaching are dependent which means there does exist a relationship between the content delivery and effectiveness of student's online engagement. Therefore, the online teaching methods (online content delivery) were found influencing for online academic engagement of students.

Hence, it is concluded that online sessions in terms of content delivery (online sessions, resolving of queries, recorded material, audio-video interaction, sharing of the screen, smartboard and so on) were found effective for students' online academic engagement during COVID 19.

6. Findings and Conclusions:

The researchers revealed that 61.3% of students preferred classroom sessions over the online platform. For conceptual clarity and in-depth understanding of the subject, students have rated classroom sessions better than online sessions.

50% of students in the study have reported problems in understanding the content of online sessions, mainly due to technical issues. A significant learning curve was experienced by the students as well as faculty members because of the sudden shift from offline to online mode, technical issues such as connectivity, network, bandwidth problems. It was observed that these factors affected the quality of online teaching. This obviously harmed students' online academic engagement (30% reported a lack of satisfactory engagement).

The study also revealed that 55.1 % of students were more comfortable with presentations and interaction with the faculty members in theory subjects rather than numerical.

It was also found 45.4% failed to understand the basic concepts even though additional study material was provided.

55.7% of students are of the opinion that writing the assignments from the examination of point of view did not serve any purpose and turned out as an unhelpful experience.

Overall, 44.3% of students were satisfied with the experience of online academic engagement, although, 61.3% of students preferred classroom sessions.

Therefore, it can be concluded that although online sessions are an effective modality of delivering teaching sessions, smart work is needed to improve students' engagement and overall satisfaction. It is necessary to create interest amongst students during online teaching by organizing interactive sessions. The faculty also need to undergo training in ICT and optimum use of different digital platforms.

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7. Suggestions:

1. The online lectures should be recorded. This would help students to refer to the content which was lost due to technical issues as per his/her convenience.
2. The sessions should be more interactive by encouraging students to participate to improve their understanding of the concept.
3. The inclusion of discussion forums and web pages as supplementary reading to online teaching would further enhance students' engagement.
4. For undergraduate students, a blended learning approach comprised of online and classroom sessions would be more effective.
5. For numerical subjects, online sessions should be arranged in such a place where faculty can use the smartboard to solve and explain the concept step by step. Once students are comfortable after solving 4/5 illustrations with that concept, the faculty can share few illustrations with solutions and then discuss them in online sessions.
6. Emphasis on a self-guided learning approach results in creativity and innovation, particularly with less experienced students. This encourages them to see themselves as creators of their learning journey rather than being passive receptors.
7. Timely, detailed and positive feedback of the performance would motivate the students to participate actively in the learning journey. Quick responses to discussion posts and email questions help students to remain on track for the next assignment.
8. The online sessions should cover and focus on conceptual clarity. Supplementary study material in the form of illustrations or small case lets can be used to check the understanding of students.
9. Class surprise tests with evaluation would certainly force them to be mentally and physically active during online sessions.

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