

ANALYSIS OF ATTITUDE OF TRAINEE TEACHERS TOWARDS ONLINE TEACHING-LEARNING PRACTICES DURING DEADLY SURGE OF COVID-19 PANDEMIC IN WEST BENGAL

Dr. Subhasis Mukherjee

Principal, Shyamaprasad Institute of Education & Training, Kolkata

Dr. Sujit Pal

Principal, Institute of Education for Women, Hastings House, Kolkata

ABSTRACT

The present study was conducted to analyze the attitude of the B.Ed. trainee teachers in West Bengal with respect to online teaching-learning practices in the event of the 2nd and 3rd waves of the Covid-19 pandemic situation. A self-made five-point attitude scale was developed, standardized and administered on 369 randomly selected B.Ed. trainee teachers of 2020-2022 & 2021-2023 academic sessions for measuring their attitude under four categorical variables viz. gender (male & female), institutions (Government, Government aided & self-financed), residential zones (urban, rural and semi-urban), and streams (Science & Social Science). A significant difference has been observed between male and female trainee teachers with respect to their attitude toward online teaching-learning practices. Male trainee teachers show more positive attitudes (Mean = 84.22) than females (Mean = 81.63). This may be due to the fact that they received more easy access to digital instruments and remained less busy in their household activities than their female counterpart. The present study failed to establish any significant difference between the trainee teachers with respect to their academic discipline or stream and residential zone. This may be due to the fact that attitude is an intrinsic feature of an individual and is not influenced by academic discipline and residential zone. On the other hand, the present treatise reveals that attitude toward online teaching-learning practices significantly differs among the nature of institutions (Government, Government aided & Self-financed). This may be due to the fact that trainee teachers from different institutions are not always receiving equal opportunities to use the digital platform. Moreover, the present study established a significant interaction effect between institutions and residential zones on trainee teachers' attitudes towards online teaching-learning practices. Finally, it was observed that the trainee teachers were not very much interested in online teaching-learning process; rather they wanted to use this avenue as a secondary pathway during the pandemic situation.

Keywords: Trainee teachers, Online Teaching-Learning, Covid-19 Pandemic, Digital Platform.

INTRODUCTION

The deadly surge of the Covid-19 pandemic has adversely impacted education at all levels in various ways right from pre-primary to higher and technical education. The teacher education programme is no exception. This biological disaster caused a forced transition from face to face interaction to remote teaching-learning. As such the researchers went through different online research journals. Some of the important research works carried out in this area have been presented here. In the field of teacher education so many constraints in terms of complex home environment (Zhang *et al.* 2020), lack of monitoring and support services (Judd *et al.* 2020), lack of teacher educators' competencies in the use of digital instrumental formats (Huber and Helm 2020), insufficient and unstable internet connectivity, inadequate computer lab, lack of computers and associated technical problems (Zalat *et al.* 2021) and digital divide (Mpungose 2020) have been identified. Students made little or no progress while learning from home (Engzell *et al.* 2021). Brinia and Psoni (2022) studied on online teaching practicum during Covid-19 pandemic and indicated that the teacher candidates got acquainted with new technologies to a great extent and developed skills for their future teaching like adaptability, flexibility and handling of students' interaction via online settings. Kidd, Warren, Murray and Jean (2020) studied the effect of Covid-19 pandemic on teacher education programme. They reported that how pedagogies relocated learning communities to new online spaces when practicum was forcibly removed due to pandemic situation. Carmen *et al.* (2020) conducted a study on Covid-19 and teacher education where the need for a comprehensive view of the pedagogy of online education was highlighted. Mahmood (2020) also conducted a study on instructional strategies for online teaching in Covid-19 Pandemic and suggested various instructional strategies for higher education institutions in the event of online teaching-learning practices. Dhawan (2020) conducted Strengths, Weakness, Opportunities and Challenges (SWOC) analysis of e-learning at the time of crisis and also gave suggestions on how to deal with challenges associated with online learning. As far as teacher education is concerned, descriptions of how institutions and stakeholders adapted to the new scenario created by Covid-19 pandemic as well as training strategies and experiences of innovation have been reported. Carrillo and Flores (2020) conducted a literature review of online teaching and learning practices. The findings highlighted the need for a comprehensive view of the pedagogy of online education that integrates technology to support teaching and learning. Almahasees *et al.* (2021) found that both faculty and students agreed that online education was useful during the pandemic situation and recommended that blended learning would help in providing a rigorous learning environment. Naik *et al.* (2021) indicted that lack of facilities, infrastructure, technological tool

and the internet access were the major drawbacks for conducting online sessions in India. Mishra *et al.* (2020) reported one troublesome issue associated in conducting practical classes during lockdown period. This study also revealed that there has been a greater realization of the time bound relevance and criticalities of online teaching-learning mode during the lockdown period. Elumalai *et al.* (2020) showed that there was a significant difference in the perception of the students between gender, level of the course on the quality of e-learning in the higher education sector during the Covid-19 pandemic. A case study of Peking University on Human Behaviour & Emerging Technologies (2020) presented high impact principles for online education in terms of online instructional design, providing assistance to students, effective delivery through online mode and contingency plan to deal with unexpected incidents of online education platform. Rapanta *et al.* (2020) showed how the Covid-19 pandemic has raised significant challenges for the higher education community worldwide. Bordoloi *et al.* (2021) enumerated the prospects and challenges of providing online/blended mode of teaching & learning in a country like India, particularly during and in post Covid-19 situation.

It is evident that the self-financed secondary teachers' training institutions in West Bengal are mostly based on traditional methods of teaching and learning. But during second and third wave of Corona Virus, it was impossible to follow the traditional set up of face to face lectures in a classroom. Thus, this article intended to inquire the trainee teachers' (2020-2022 & 2021-2023 batches) attitude towards the forced transition from offline mode to online mode during the time of pandemic and natural disaster. It is to be taken into consideration that the present teacher education curriculum has been thoroughly revised following NCTE Regulations, 2014 where engagement with field and prolonged school internship have been given utmost importance. Closure of teachers' training colleges in West Bengal during compulsory lockdown period resulted in a shift from the traditional face to face offline curriculum transaction to online teaching-learning practices. The researcher went through different online research journals on the topics with which the present study is related. According to Anastasi (Psychological Testing, Seventh Edition 2008, p. 418) an attitude is often defined as a tendency to react favorably or unfavorably toward a designated class of stimuli. Freeman (Theory and Practice of Psychological Testing, 1965, p.596) said that an attitude is a dispositional readiness to respond to certain situations, persons, or objects in a consistent manner which has been learned and has become one's typical mode of response. In the present study, the term "attitude" has been used to mean a settled way of thinking or feeling about something. It requires individuals to make a decision on their level of agreement on a five-point scale (viz. Strongly Agree, Agree, Undecided/Neutral, Disagree & Strongly Disagree) with each of the statements in the scale. Online teaching and learning imply that majority of the coursework will be done through the internet in terms of Whatsapp, Messenger, Email, Google Classroom, Google Meet, etc. But it does not imply that there is no face-to-face interaction

between students and teachers, but communication is primarily online. On scrutiny, it appears that although several researchers working in this field there are some gap areas in the research related to trainee teachers' attitudes towards online teaching-learning practices, especially in the event of a covid-19 pandemic situation. To fill up the gap, the present research work was attempted.

OBJECTIVES OF THE STUDY

The following major objectives were set up for the present study :

1. To develop and standardize a scale for assessing attitude of the trainee teachers towards online teaching-learning practices.
2. To study and compare the attitude of the trainee teachers towards online teaching-learning practices with respect to residential zone (urban, rural, semi-urban), gender (male, female), stream (science, social science) and nature of institutions (Government, Government-aided, self-financed institutions).
3. To study the interaction effect, if any, among the four selected categorical variables (viz. gender, residential zone, stream & nature of institutions).

HYPOTHESES OF THE STUDY

Based on the major objectives the following null hypotheses were framed for the present study.

H₀1: There is no significant difference in trainee teachers' attitude towards online teaching-learning practices with respect to:

- a. Gender
- b. Nature of teachers' training institutions.
- c. Residential zones.
- d. Streams.

H₀2: There is no significant interaction effect on trainee teachers' attitude towards online teaching-learning practices with respect to:

- a. Gender and institutions
- b. Gender and residence
- c. Gender and stream
- d. Institutions and residence
- e. Institutions and stream
- f. Residence and stream

- g. Gender, institutions and residence
- h. Gender, institutions and stream
- i. Gender, residence and stream
- j. Institutions, residence and stream
- k. Gender, institutions, residence and stream

SAMPLE

All the trainee teachers of secondary teachers' training institutions of West Bengal were selected as population for the present study. From the list of NCTE recognized Secondary Teachers Training Institutions in West Bengal, 7 institutions were selected randomly from Kolkata, Howrah & Hooghly districts (5 institutions for final study and 2 institutions for pilot study). After getting the institutional approval from different college authorities, the researchers selected 369 trainee teachers randomly. The selected trainee teachers of 2020-2022 & 2021-2023 batches were given proper instructions for giving responses before the commencement of data collection session in each teachers' training institutions. The demographic characteristics of the sample are shown in Table 1.

Table 1. Demographic characteristics of the sample

Category	Sub Category	N = 369	Percentage
Gender	Male	109	29.54
	Female	260	70.46
Residential Zone	Urban	182	49.32
	Rural	159	43.09
	Semi-Urban	28	7.59
Institution	Government	7	1.90
	Government Aided	82	22.22
	Self-financed	280	75.88
Stream	Science	129	34.96
	Social Science	240	65.04

It is to be noted that prior to final data collection, a different sample of **150** trainee teachers from 2 institutions were selected to standardize the tools used for final data collection.

TOOL & TECHNIQUE USED

A self-made English version attitude scale was developed to measure the attitude of the trainee teachers towards online teaching — teaching-learning practices during 2nd and 3rd wave of Covid-19 pandemic. Initially the draft survey format was prepared comprising of 35 items with corresponding responses arranged in a 5 point Likert type of scale. After receiving the views from the experts, the draft scale was revised and finalized for try out. The revised draft attitude scale was comprised of 30 items with corresponding responses like “strongly agree”, “agree”, “neutral”, “disagree”, “strongly disagree”.

Pilot Survey

A sample comprising 150 trainee teachers (Male=80, Female=70) were selected from 2 secondary teachers’ training institutions. The pilot survey was done with the following objectives :

- Rectification of instructions before finalization
- Determination of appropriateness of the test items
- Calculation of reliability and validity of the test items
- Finalization of norms

Item Validity

Item validity was determined by computing item total correlation for each item. Here Pearson Product Moment correlation technique was employed. It shows how well the item is measuring that function which the test itself is measuring. The results are given in Table 2.

Table 2 : Item total correlation of each item of Teaching Aptitude Test (N = 150)

Item	Item total correlation	Item	Item total correlation	Item	Item total correlation
1.	0.109*	2.	0.165*	3.	0.434**
4.	0.353**	5.	0.525**	6.	0.478**
7.	0.198**	8.	0.564**	9.	0.650**
10.	0.566**	11.	0.380**	12.	0.666**
13.	0.620**	14.	0.619**	15.	0.549**
16.	0.554**	17.	0.341**	18.	0.571**
19.	0.592**	20.	0.636**	21.	0.663**

22.	0.543**	23.	0.544**	24.	0.378**
25.	0.496**	26.	0.155*	27.	0.110*
28.	0.121*	29.	0.108*	30.	0.274**

*p<0.05 **p<0.01

All the items (in Table 2) correlated significantly with total score. However, item 1, 2, 26, 27, 28 and 29 of the attitude scale contributed comparatively little to the total score. But since the contents of these items were rated very high by the experts and these are not at least negatively correlated, the items were retained in the final scale. Good item validity is itself a guarantee of test validity. Since no external criteria were available and since all the items were scanned and rated by the experts, the content validity was also ensured for the attitude scale.

Reliability

Reliability co-efficient was determined by Cronbach Alpha method and was found to be 0.792 which is quite good to be accepted for social study.

Norms

Norms were determined in terms of Mean and Standard Deviation for all the sub-groups of sample and combined group which are given in the following tables:

Table 3 : Mean & Standard Deviation of the Combined Group

Mean	Standard Deviation
82.39	10.41

Table 4 : Mean & Standard Deviation of the Sub Groups

Categorical Variables		Mean	Standard Deviation
Gender	Male	84.22	10.61
	Female	81.63	10.25
Residential Zones	Urban	82.25	11.66
	Rural	82.79	8.88
	Semi urban	81.12	10.39

Nature of Institutions	Government	87.71	10.44
	Government aided	78.44	8.78
	Self-financed	83.42	10.58
Streams	Social Science	82.44	9.86
	Science	82.32	11.41

Statistical Technique Used

Data analysis was carried out with the help of Descriptive Statistics, Pearson's Correlation, t-test, One Way ANOVA and Factorial Analysis of Variance.

On the basis of above interpretation, the final scale for measuring the attitude of the trainee teachers towards online teaching — teaching-learning practices were prepared and administered over 369 randomly selected trainee teachers of five secondary teachers training institutions of West Bengal.

RESULT AND DISCUSSION

The null hypothesis H_0 was tested by using different statistical techniques (t-test and one-way ANOVA) and the results are represented below:

Table 5 : t-test result for difference between male and female trainee teachers in their attitude towards online teaching-learning practices

Dependent Variable	Independent Variables	N	Mean	SD	t-Value	df	Sig.
Attitude	Male	109	84.2202	10.61302	2.191	367	0.029*
Scores	Female	260	81.6308	10.24687			

***p<0.05**

The result of independent samples t-test reflects that the calculated t-value (2.191) is significant at 5% level of significance. So, it is clear that there exists 'significant' difference between male and female trainee teachers in their attitude towards online teaching-learning practices. The mean value of Male trainee teachers shows more positive attitude (Mean = 84.22) than female (Mean = 81.63). This may be due to the fact that male trainee teachers have received more easy access of digital instruments and remained less busy in their household activities than their female counter part.

Table 6 : One-way ANOVA result of attitude towards online teaching-learning practices based on nature of the teachers' training institutions.

Sources of Variances	Sum of Squares	df	Mean Square Variance	F	Sig.
Between Group	1776.338	2	888.169	8.532	.000**
Within Group	38097.895	366	104.093		
Total	39874.233	368			

****p<0.01**

The result of one-way ANOVA revealed that the calculated value of F (8.532) is significant at 1% level of significance. So, it is clear that there exists a significant difference among the trainee teachers of Government, Government aided and self-financed teachers' training institutions in their attitude towards online teaching-learning practices. The mean value of trainee teachers of Government teachers' training institutions shows a more positive attitude (Mean = 87.71) than that of self-financed (Mean = 83.42) followed by Government aided (Mean = 78.44) teachers' training institutions. This may be due to the fact that trainee teachers from different categories of institutions do not have equal access to the digital platform for online teaching-learning practices. This result is not conclusive in nature but rather more in-depth study with a larger sample size is required to reach any conclusive decision.

Table 7 : One-Way ANOVA result of attitude towards online teaching-learning practices based on residential zones of the trainee teachers

Sources of Variances	Sum of Squares	df	Mean Square Variance	F	Sig.
Between Group	114.136	3	38.045	.349	.790
Within Group	39760.097	365	108.932		
Total	39874.233	368			

The result of one-way ANOVA reflects that the calculated value of F (.349) is not significant at 5% level of significance. So, it can be interpreted that there is no significant difference among the trainee teachers from urban (Mean = 82.25), rural (Mean = 82.79), and semi-urban (Mean = 81.12) areas in their attitude towards online teaching-learning practices. This may be due to the fact that attitude of an individual is an intrinsic feature and not influenced by his/her residential zone.

Table 8 : t-test result for difference between trainee teachers in their attitude towards online teaching-learning practices based on academic discipline of the trainee teachers.

Dependent Variance	Independent Variables	N	Mean	SD	t-Value	df	Sig.
Attitude Scores	Social Science	240	82.4375	8.77440	.105	367	.916
	Science	129	82.3178	10.57628			

The result of independent sample t-test reflects that the calculated t-value (0.916) is not significant at 5% level of significance. So, there exists no significant difference between trainee teachers with social science stream (Mean = 82.44) and trainee teachers with science stream (Mean = 82.32) in their attitude towards online teaching-learning practices. Similarly, this may be due to the fact that being an intrinsic feature attitude of the trainee teachers may not be influenced by the streams or academic disciplines they choose.

The interaction effects (H_{02}) among different variables under study were studied statistically and the results are represented below :

Table 9 : Summary of ANOVA of scores on trainee teachers' Attitude towards online teaching-learning practices in relation to gender, residential zone, institutions and stream.

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	5665.783	27	209.844	2.092	.001
Intercept	285037.279	1	285037.279	2841.336	.000
Gender (A)	122.225	1	122.225	1.218	.270
Institutions (B)	1357.756	2	678.878	6.767	.001
Residence (C)	201.575	3	67.192	.670	.571
Stream (D)	83.805	1	83.805	.835	.361
Gender * Institutions	24.657	2	12.329	.123	.884
Gender * Residence	198.499	2	99.250	.989	.373
Gender * Stream	16.207	1	16.207	.162	.688
Institutions * Residence	949.354	3	316.451	3.154	.025

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Institutions * Stream	562.520	2	281.260	2.804	.062
Residence * Stream	318.260	2	159.130	1.586	.206
Gender * Institutions * Residence	107.368	2	53.684	.535	.586
Gender * Institutions * Stream	167.003	1	167.003	1.665	.198
Gender * Residence * Stream	11.017	1	11.017	.110	.741
Institutions * Residence * Stream	266.890	2	133.445	1.330	.266
Gender * Institutions * Residence * Stream	67.374	1	67.374	.672	.413
Dependent Variable : Attitude towards online teaching-learning practices					

The result of Factorial ANOVA indicates a significant first order interaction effect between institutions and residential zones (B x C). Here, it is seen that the calculated F value (3.154) is significant at 5% level of significance. This may be due to the fact that the combined effect of these two independent variables influences the dependent variable, i.e. the attitude of the trainee teachers towards online teaching-learning practices. On the other hand, the findings also reveal that except institutions and residential zones there is no interaction effects of other combinations. So, our present treatise fails to establish any significant interaction effect between the variables under study except institutions vs. residential zones of trainee teachers.

CONCLUSION

Results clearly revealed that significant difference was observed among the trainee teachers' attitude towards online teaching-learning practices with respect to gender (male & female) and nature of institutions (Government, Government aided & self-financed). On the other hand, no such significant difference was observed among the trainee teachers with respect to residential zones (urban, rural & semi urban) and streams (social science & science). This study also indicated a significant interaction effect between teachers' training institutions and residential zones on

trainee teachers' attitude towards online teaching-learning practices. Probable constraints in smooth functioning of online teaching-learning practices during the pandemic situation were also noticed like - the lack of uninterrupted internet services, non-availability of smart phone or laptop or desktop, inability to think about the situation more critically, the lack of proper planning from the teacher educators' end with respect to conducting online classes, the absence of positive attitude towards teaching-learning via online mode, inability in handling electronic gadgets used for online teaching-learning purpose, the lack of encouragement and support from families and teacher educators. Mostly the secondary teachers' training institutions seem to be habituated with traditional face to face teaching and learning activities and the trainee teachers are also accustomed to the system. In case of natural calamities or pandemic situation where online teaching-learning is inevitable, it is advisable that higher education institutions should think over various instructional strategies for online mode and offer flexible teaching and assessment policies, concerned teacher educators should develop slow voice speech, practice voice modulation, develop interactive online classes, share class materials, try to enhance students' learning abilities via online mode and get their feedback after the completion of each online classes. Higher education institutions should make collaboration with telecommunication industries to overcome internet related issues (Mahmood, 2020). The Organization for Economic Cooperation & Development (OECD, 2020) suggests in favour of developing attitudes towards online learning to overcome some of the potential challenges such as remaining focused during online classes or maintaining sufficient motivation, providing teachers with support to incorporate technology effectively into their teaching practices and supporting teachers' training programmes about the use of digital resources for effective and efficient pedagogical practices and thereby enhancing teaching-learning practices through online mode. The Covid-19 crisis compelled the whole education system to adopt alternative mode of education and it was a forced transition from traditional face to face mode. Further research should be conducted with respect to enhancing the effectiveness of the present teacher education programme via blended mode as an alternative pathway.

REFERENCES

- Almahasees Z., Mohsen, K., & Amim, MO. (2021). Faculty's and Students' Perceptions of Online Learning During COVID-19. *Frontiers in Education*, 6, 1-10. Retrieved from doi:10.3389/feduc.2021.638470
- Anastasi, Anne, Urbina, Susana. Seventh Edition (2008). *Psychological Testing*, Seventh Edition. Pearson Prentice Hall. 418-421

- Bordoloi, Ritimoni., Das, Prasenjit., Das, Kandarpa.(2021). Perception towards online/blended learning at the time of Covid-19 pandemic: an academic analytics in the Indian Context. *Asian Association of Open Universities Journal*, 16(1), 41-60.
- Dhawan, Shivangi.(2020). Online Learning: A Panacea in the Time of Covid-19 Crisis. *Journal of Educational technology*, 49(1), 5-22.
- Elumalai, K.V., Sankar, J.P., R, K., John, J.A., Menon, N., Alqahtani, M.S.N., & Abumelha, M.A.(2020). Factors Affecting the Quality of E-Learning During The COVID-19 Pandemic from The Perspective of Higher Education Students. *Journal of Information Technology Education : Research*, 19, 731-753.
- Engzell, Per., Frey, Arun., Verhagen, Mark D.(2021). Learning Loss due to school closures during the Covid-19 Pandemic. *Proceedings of the National Academy of Sciences, U.S.A*, 118(17), 1-100.
- Freeman, Frank, S. Third Edition (1965). *Theory and Practice of Psychological Testing*, Oxford & IBM Publishing Co. Pvt. Ltd., New Delhi
- Garrett, Henry E. Eleventh Indian Reprint (2004). *Statistics in Psychology and Education*. Paragon International Publishers.
- Konig, Johannes., Biela, Daniela J. Jager & Glutsch, Nina.(2020). Adapting to online teaching during Covid-19 school closure: teacher education and teacher competence effects among early career teachers in Germany. *European Journal of Teacher Education*, 43(4), 608-622.
- Mahmood, Samreen. (2020). Instructional Strategies for Online Teaching in Covid-19 Pandemic. *Human Behaviour and Emerging Technologies*, 3(1), 199-203.
- Mahmood, Samreen. (2020). *Instructional Strategies for Online Teaching in Covid-19 Pandemic*. Human Behaviour and Emerging Technologies, Wiley Online Library.
- Mangal, SK., Mangal, Shubhra.(2015). *Research Methodology in Behavioural Sciences*. PHI Learning Pvt. Ltd. Delhi.
- Mishra, L. Gupta, T. Shree, A. (2020). Online teaching-learning in higher education during lockdown period of Covid-19 Pandemic. *International Journal of Educational Research Open*, 1.

- Naik, G.L., Deshpanda, M., Shivananda, D.C., Ajey, C.P., & Manjunath Patel, G.C. (2021). Online Teaching and Learning of Higher Education in India during COVID-19 Emergency Lockdown. *Pedagogical Research*, 6(1), 1-14.
- Rapanta, C. Botturi, L., Koole, M. (2020). Online University Teaching During and After the Covid-19 Crisis: Refocusing Teacher Presence and Learning Activity. *Postdigital Science and Education*, 2, 923-945.
- Said, Ghada Refaat El. (2021). How Did the Covid-19 Pandemic Affect Higher Education Learning Experience? An Empirical Investigation of Learners' Academic Performance at a University in a Developing Country. *Advances in Human Computer Interaction*, 2021, 1-10.
- Sankar, J., Elumalai, K. V., Kalaichelvi, R. & John, J. (2020). Factors Affecting the Quality of E-Learning During the Covid-19 Pandemic from the Perspective of Higher Education Students. *Journal of Information Technology Education Research*, 19(1), 731-753.
- Sharma, Yogendra K. (2005). *Principles of Educational and Vocational Guidance*. Kanishka Publishers & Distributors, New Delhi.
- Zalat, M. M., Hamed, M. S. & Bolbol, S. A. (2021). The Experiences, Challenges and Acceptance of e-Learning as a tool for teaching during the Covid-19 pandemic among university medical staff, *PLOS*, 16(3).