

Chapter - III

Effectiveness of IGNOU Teleconferencing for Distance Learners

3.0 Introduction

The present chapter puts forth a detailed report of all the aspects of the study related to the objective II. This objective is to study the effectiveness of teaching the distance learners through teleconferencing in terms of their mean achievement scores.

The subsequent text of this chapter deals with the methodological details including data analysis, its interpretation as well as findings with respect to objective II.

3.1 Research Design

In view of objective II, a combination of qualitative and quantitative research approach was followed. With regard to quantitative research approach, pre-test, post-test, single group design was employed after reviewing the related literature on research designs and related areas having a series of discussions with experts and researchers, having known the nature and philosophy of distance education which features on the flexibility and credit system of education.

Flexibility aspect and credit systems are in terms of place, pace and duration of study. Credit system especially is based on the time factor involved in studying. One credit is equivalent to thirty study hours inclusive of all learning activities. Different programmes have different credit requirements. Learners have the right to earn credits at their own pace and according to their own convenience and capability. Thus knowing all these factors, it was decided that

pre-test, post-test single group design would be the most appropriate one in the present context of objective II of the study.

As the presence of learners attending teleconferencing programmes was very low, as well as, due to flexibility aspect of distance education, it was decided not to employ pre-test - post-test control group design. One more significant point taken into consideration here was the difficulty felt in making a randomized selection of learners / group.

In order to control the influence of extraneous variables, precautions were taken in terms of keeping a minimal time gap between pre-test and post-test. This, to some extent provided for the control of some of the variables, which jeopardize internal validity of the experiment.

The quantitative approach was followed by qualitative approach where informal discussions based on the pre-test and post-test responses were done. This helped in cross-checking the pre-test - post-test responses of the respondents, as well as, effect of independent variables on dependent variables. Instrumentation was taken into consideration through the reliability of the tools used in the experiment.

3.2 Sample

For the purpose of sampling, a list of all the IGNOU programmes offered in Gujarat region where teleconferencing was used as one of the instructional strategies was made. Except for a few programmes, like, B.Sc. in Nursing, Certificate in Disaster Management, Post Graduate diploma in Higher Education (PGDHE) programmes, it was also observed that in almost all the IGNOU programmes, the presence of learners attending regular teleconferencing programmes was negligible. PGDHE being under the Extended Contact

Programme (ECP) was the only programme where attendance was essential. Thus, it was found that presence of learners in this particular subject was stable and higher compared to other programmes where the presence of learners ranged from 1 to 5 in number per teleconferencing programme, even that was not consistent. Thus, learners of PGDHE programme were chosen as a sample for study of the present objective.

The sample consisted of learners of Post Graduate Diploma in Higher Education (PGDHE) programme of Gujarat Region, attending the Extended Contact Programme (ECP) at Baroda Study Centre between February 12 to February 21, 2000.

The total duration of the ECP was of 10 days. The ECP, which forms the sixth course of PGDHE and carries 4 credit weightage is an essential component to be fulfilled by all the learners. The overall grade of learners in PGDHE programme is evaluated on the basis of learners' performance in the ECP.

The total duration of teleconferencing programmes was of 8 hours. The sample consisted of those learners who attended teleconferencing programmes for at least 6-8 hours. There were a total of 26 respondents.

3.3 Pilot Study

In order to tackle the difficulties that could be encountered during data collection at the experimental phase, a pilot study was conducted from June, 1999 to December, 1999.

For conducting the pilot study, the investigator observed the various teleconferencing programmes for almost 6 months.

Later, based on the personal observations made and the discussion with teleconferencing coordinator of Baroda Study Centre, PGDHE - teleconferencing

programmes were selected for the purpose of the study. Permission for conducting the experiment for this pilot study was taken from the Centre Co-ordinator of Baroda Study Centre.

For the purpose of experimentation, 5 PGDHE learners were given pre-test. Soon after pre-test, respondents were shown pre-recorded TC programmes of PGDHE-ECP, 1998.

After the exposure to pre-recorded ECP-TC programmes, post tests were administered. The scores of pre-test and post-test were recorded and it was found that there was no significant difference in the achievement scores of learners. These tests were based on the contents covered in the selected teleconferencing programmes.

Informal discussions with learners were also conducted during experimentation. Besides, the investigator also administered pre-test to 3 learners of Certificate in Disaster Management (CDM) subject. But at the time of post-test, all the 3 respondents dropped out. Thus, for the final experimentation, it was decided to select respondents of PGDHE programme only.

While conducting the test, investigator contacted and consulted panel of resource persons and subject experts. The final tool was constructed keeping in mind the experts' comments and learners' responses.

During pilot study, some observations were made that might be responsible for the under utilization of these teleconferencing programmes.

Some of them are cited here:

1. The TV viewing room was a part of office room. Hence there was a lot of noise and disturbance while teleconferencing programmes were going on.
2. Most of the students were not aware about teleconferencing programmes.

3. Teleconferencing schedules were not displayed regularly on the general notice board of the study centre, but were pasted on the walls of the study centre. That increased the possibility of all the students / learners not noticing the schedules, which might be another factor contributing to negligible presence of learners for teleconferencing programmes.
4. There was no fax machine in the TV room. The telephone set was also not kept in the same room.
5. Even Centre Co-ordinator and TC programme monitoring persons were not interested in utilizing teleconferencing programmes due to administrative difficulties, lack of separate TV room and regular contact between learners and IGNOU Study Centre personnel, etc.
6. TV viewing room was next to the parking area, causing a lot of disturbances in hearing and viewing teleconferencing programmes. As a result learners lost interest in teleconferencing programmes.
7. Electricity failure and poor reception of teleconferencing programmes were quite common in the selected study centres. Due to this, learners were not keen on watching teleconferencing programmes.

The above observations lead the investigator to think of an alternative that might result in a better utilization of these teleconferencing programmes. Some of the important points are mentioned here under:

1. There should be separate TV viewing room, which should be sound proof.
2. At least one telephone set (toll free number) should be placed in the viewing room.
3. Learners should be made aware of and informed about teleconferencing programmes well in advance or at least on time.

4. If possible there could be a provision of a generator during the time of power failure.

From the above presentation, it seems that if the shortcomings mentioned earlier were minimized, then if not majority, at least many of the learners could attend teleconferencing programmes.

3.4 Instrumentation

A study needs research tools or instruments to measure variables. This objective (II) of the study was to find out the impact of the treatment i.e. teleconferencing programmes in PGDHE on (scholastic) achievement of learners, through pre and post achievement test.

3.4.1 Description of the Tools

Achievement tests were constructed for the pre and post test for respondents of objective II. These tests were based on the content covered under selected teleconferencing programmes. These tests were administered separately. The tests were aimed at measuring the previous knowledge of the selected IGNOU subject, as well as, the extent to which the specified instructional outcomes were attained by the respondents.

Schedules of selected teleconferencing programmes alongwith the list of related resource persons were collected from EMPC, New Delhi in the month of December 1999. These schedules were containing details like time and date of telecast, name of the programme and topic. [See appendix 3(a)]

3.4.1.1 Pre-test(s)

The test was designed to measure the previous knowledge of the respondents about the selected courses of PGDHE subject under ECP as well as

the aims and objectives of IGNOU TC. The test was based on the content derived mainly from the four courses of PGDHE, that is, ES 301, ES 302, ES 303, and ES 304. On the first day the test was taken by all the respondents. This test comprised of Section-I of the pre-test.

The tests were developed and validated following the general procedure employed for test construction like:

- Determining the instructional objectives in terms of ECP objective under PGDHE subject.
- Deciding upon the format of test items, and,
- Developing and validating the test items.

Items were constructed after going through the course material of ES-301, ES-302, ES-303, ES-304 and "Students' Handbook" for ECP (PGDHE) and discussing with related resource persons as well as after previewing the pre-recorded programmes of previous ECP-PGDHE subject. The test was divided into 2 sections. The time of administering each section was different.

Section I of test was mainly comprised of aims and objectives of ECP (PGDHE) while in Section II, the items from courses ES-301 to ES-304 were included. Mainly short answer and objective type of items were constructed. Initially, around 30 items were developed with the help of content specialists like subject teachers and researchers. The initial format of the test was then distributed to experts (resource person) for the improvement. Then to locate the ambiguity concerning the language aspect, the test was administered to 5 learners of PGDHE programme of Baroda Study Centre.

Coverage of the content, clarity and suitability of the language and content, adequacy of the direction, etc. were taken into consideration with the help of the suggestions given by teachers and experts.

The final format of the test contained 11 items with a maximum of 50 marks.

The content validity was judged by the reactions made by the experts. The final format of the test and its scoring key have been given in the appendix 3(b).

3.4.1.2 Post-test

The test was designed to measure the extent to which instructional outcome were attained in terms of gain in knowledge or test scores of the respondents. The content of the test was identical to the pre-test. The only difference was in the time of administering it. The post test of the Section-I was administered after the 1st day teleconferencing programmes were over, while Section-II was administered soon after the last TC session. Precaution was taken to keep minimal time gap between pre and post achievement tests.

3.4.2 Guidelines for Informal Discussion

Informal discussions were held for gathering the information, which was not covered in the pre and post achievement tests.

The discussions was focussed on the following main points:

- Aims and objectives of TC.
- Usefulness or benefits of TC mode from learning point of view.
- Aims and objectives of PGDHE and ECP.
- Problems and difficulties under ECP.
- Reception of the reading material, that is, time of receiving the reading material.

- Discussion about scheduled teleconferencing programmes with other participants.
- Referring reading material for next days teleconferencing programmes.
- Frequency of studying the reading resource material during the 10 days ECP.

3.5 Procedure for Data Collection

Selection of IGNOU subjects / programme for the present objective (II) was followed by the selection of learners as a single group for pre-post achievement test.

In the beginning of the ECP all the learners who were attending ECP were administered pre-achievement test.

Before the start of the first teleconferencing programme, Section I of pre-achievement test was administered to all the participating learners. The duration of the test varied from 20-30 minutes. Soon after the completion of the first day of TC sessions, post achievement test of Section I was administered. The Section II of pre-achievement test was administered before the start of ECP session on the second day of TC sessions.

Post-test was administered soon after the completion of the last teleconferencing programme. The learners who did not attend all the TC sessions were dropped out of the sample for the present objective.

In addition to this, informal discussions with learners - (respondents) were also carried out in a conversational manner during the tea break and lunch time after the TC sessions. The responses were noted down by the investigator on a separate pad in a daily diary form. An attendance sheet was also maintained by

the investigator to note the presence of learners in each TC session [Attendance sheet is presented in appendix 3(c)].

3.6 Data Analysis and Interpretation

The data were mainly quantitatively analyzed followed by qualitative inputs.

The number of learners attending the teleconferencing programmes regularly fluctuated over the period of experimental time. Therefore, the respondents / learners who were not regular were not included for the analysis.

The correlated t-test was applied. This test was used to study the significance of difference in the mean scores of pre-test and post-test, taking care of the carry over effect of pre-test on post test scores. The responses of discussions were also considered while analyzing the data.

Formula of Correlated t-test:

$$t' = \frac{m_1 - m_2}{\sqrt{\sigma_1^2 + \sigma_2^2 - 2r_{1,2} \sigma_1 \sigma_2}}$$

where :

m_1 = mean score of group 1

m_2 = mean score of group 2

σ_1 = Standard error of m_1

σ_2 = Standard error of m_2

$r_{1,2}$ = Correlation between scores of group 1 and group 2.

3.6.1 Effectiveness of TC For Distance Learners

The details of data analysis and interpretation related to the effectiveness of teaching the distance learners through teleconferencing in terms of learners'

mean achievement scores, standard error of the mean and correlated t-value are presented in a tabular form followed by its interpretation.

Table 3.1: Correlated t-value, mean scores and standard error of the mean scores and standard error of the mean

Sr. No.	Phase	Mean Score	Standard Error of the mean	Correlated t-value
1	Pre-test	20.88	1.03	4.72**
2	Post-test	22.80	0.95	

N=26

df=25; significant at 0.01 level with correlated t-tab = 2.78

Table 3.1 presents that the calculated correlated t-value (4.72) is higher than the table value (2.78) at 0.01 level with df (n-1) 25. Thus, the null hypothesis stating that there will be no significant difference in the pre-test and post-test scores of learners regarding effectiveness of teaching the distance learners through teleconferencing programme is rejected at 0.01 level.

Defining the difference between the mean scores of the post-test and the pre-test as gain, a significant gain of 1.92 was observed as the overall mean scores of the post-test was 22.80 and that of the pre-test was 20.88.

3.7 Findings and Discussion

The data indicates that there is a gain in the mean achievement scores from pre-test to post test or in other words after the exposure of learners to the TC programmes. A similar finding was also revealed by Singh (1991), that the post-test achievement mean score was significantly higher than the pre-test mean achievement score when the sample was exposed to interactive countrywide classroom programmes.

However, it may be necessary to know whether or not the apparent differences in scores were due to exposure to TC programmes alone or due to any other extraneous factor. To yield to the discernable result, informal

discussions were done with the learners. Some of the typical comments of the learners are quoted here under:

- *"It is exciting and wonderful to see and listen to an eminent speaker. It boosts me to study the subject".*
- *"TC is an excellent mode. I learnt a lot about my course by attending TC programmes".*
- *"Frankly, I didn't know the objectives of ECP and TC before, I came to know about them only after attending TC programmes".*
- *"TC programmes are ok but the viewing room is too congested, its disturbing as everyone (officials) keeps coming and going in between the programmes".*
- *"We would have learnt more if a proper orientation was given to us before".*
- *"I cannot hear to the resource persons properly, as the sound of vehicles is too much".*
- *"I cannot concentrate in ECP or TC programmes as my mind is stuck with my 3 year old daughter whom I left at my relative's house. I could have called my mother-in-law from hometown but the ECP schedule reached very late".*

Some of the learners in their comments mentioned that TC helped them to have a direct interaction with the resource persons as well as sharing of ideas with their peers. They even stated that TC helped them clear their doubts and difficulties related to course assignments and other issues like feedback on their work etc. which otherwise was not possible.

They reported that the objective of their programme (subject) was aimed at building the professional competencies and skills of practising of prospective college or university teachers. To fulfill this aim, along with theoretical inputs, a face-to-face or direct interaction with area experts was very important. This could be achieved by extended contact programmes. (ECP)

However, learners reported that to attend the ECP they had to be away from their work and homes (especially outstation learners) for almost 10 days which was very difficult. This problem was more felt by female learners as well as those who were married and having a family. Learners also complained about their accommodation facility. Similar was the findings by *Subayamma* (1998) where she stated that female learners showed apprehension in attending TC programmes especially ECP which is of ten days due to improper accommodation facility at the host site.

Further, many learners complained that they had not yet received their study material related to the ECP. Some had received it a few days or some time back only. But since most of them were working, so they did not get enough time to read the material before joining the ECP.

Some of the learners stated that they did not get time to discuss about the next day's programmes with their peers. In fact as soon as the day's programme was over, they were so much exhausted that they preferred to rush back home or to the guest house.

From the above mentioned comments of learners, it could be stated that though learners do not get time to discuss about the TC programmes or to refer to the reading material on TC programmes' content during ECP, from the comments of some of the respondents, it becomes clear that effectiveness of TC

also depends on the way it is utilized by the learners. The utilization may also depend on the favourable conditions like proper viewing and adequate seating arrangements, proper conduction of pre and post telecast activities by the Receiving Centre Coordinator and the level of talkback or interaction of learners with the panel experts.

Focussing on the achievement of students through the interactive teleconferencing, *Passi et al. (1992)*, *Ciferentes, Murphy, and Davis (1998)*, stated that learners achievement went higher after viewing talkback tele-teaching programmes. There were other authors like *Carl (1984)*, *Ellis (1992)*, *Whetzel et al. (1996)*, who also supported that teleconferencing enhanced and improved students' performance. Further, *Catchpole (1988)*, *Dallat, et al. (1992)*, *Abbott et al. (1994)* stated that exposure of distance students to teleconferencing improved students' learning.

However, *Olgren and Parker (1983)* witnessed that utilization of TC for the achievement of students in DE settings would be influenced by several factors. Some of them could be proper infrastructure and a user orientation to technology. Supporting to this, *Reinhart and Schneider (1998)* suggested that physical environment including infrastructure inside viewing room was an important factor for successful teleconferencing as well as to improve students' academic performance through two-way interactive mode of learning.

Thus, it could be concluded that though TC was effective in increasing the learner's mean achievement scores but proper infrastructure, like, proper seating arrangement, noise free viewing room, facility of phone/fax in viewing room, timely information of TC programmes were some of the highly influencing factors to enhance learner's learning through two-way audio and one-way video mode.