CHAPTER 3

METHODOLOGY

3.1 GENERAL

This chapter deals with the various methods and techniques used by the researcher to carry out the research. The research design, tools, and the step by step research processes are described here. It embeds the research design and tries to address the central research question. The theoretical analysis of the methods determines how such tools are deployed and interpreted in the research studies. Hence, the sample size, representation ratio of the universe, strategies and tools of data collection and confrontation of statistical analysis by the researcher are explained.

3.2 RESEARCH DESIGN

The research design enables the researcher in better understanding of a complex issue or object and can extend experience or add strength. Thereby the research design enables the researcher to derive the result and to interpret with the results achieved. It is basically a plan of what data to gather, from whom, how and when to collect the data, and how to analyse the data obtained; so that it gives the specific results. This covers the entire niche that the researcher has to undergo in order to achieve the output.

Descriptive research design has been adopted in the current research, unfolding the effectiveness of Anna EDUSAT’s educational programmes among the different branches of engineering students. The study
tries to make an effort to describe the students’ awareness about the educational television channel Anna EDUSAT, the duration watched by them, the magnitude of syllabus it covers, overall benefits, and suggestions given by the students who are regularly watching the educational content. It also tries to cover the drawbacks which if considered seriously, might improvise and strengthen the channels promulgating space among its competitors.

![Figure 3.1 Flow Chart of the Research Study](image-url)
3.2.1 Universe

The entire set of engineering student population who has access to watch Anna EDUSAT channel across Tamil Nadu formed the universe for this study. Engineering Education after Higher Secondary is the foremost route for many of the students in Tamil Nadu. The number of Engineering Colleges in Tamil Nadu is 570. About 1.25 lakh students get admitted every year in these colleges.

To have an idea regarding the universe chosen for this study, the background details that comprise Anna University has to be briefed out. Anna University was established on 1978 which offers higher education in Engineering, Technology and allied Sciences. The University was formed by integrating four well-known technical institutions in the city of Madras.

- College of Engineering, Guindy (CEG) (1794)
- Alagappa College of Technology (ACT) (1944)
- Madras Institute of Technology, Chrompet (MIT) (1949) and three Technological Departments of the University of Madras.
- School of Architecture and Planning (SAP) (1957)

More than 500 Self-financing Engineering Colleges, 06 Government Colleges and 03 Government-Aided Engineering colleges located in various parts of Tamilnadu State have been associated to it so far. The Anna University affiliated colleges are four types:

- Anna University Colleges & Campus
- Tamil Nadu Government Engineering Colleges
- Tamil Nadu Government Aided Engineering Colleges
- Self - Financing Engineering Colleges
Though Anna University consists of more than 500 and odd colleges, only 71 colleges at present have subscribed to ANNA EDUSAT. As an amount of Rs.5 lakh Indian Rupee (INR) is charged as the subscription fee, hence only limited colleges show interest in getting the Anna EDUSAT facility. Among the 71, few colleges are participating in the programmes sincerely. So the scholar has selected 7 colleges (10%) from distant parts of TN. Hence the researcher was bound to limit the study size and kept the sample ratio to a limit of 100 respondents from each college. While necessary efforts were made to cover all the districts of Tamil Nadu to exemplify the universe for this research study. As the colleges belong to urban, semi-urban and rural category, both the edges have been successfully represented. It can be clearly stated 10% representation of the universe size is covered.

3.3 METHODS USED FOR RESEARCH

In every research work the methodology plays a crucial role. The attainment of thorough success in the research topic is determined through the adoption of various approximate or suitable methods which later amalgamates with the pertinent data collected from varied sources. Diversified array of methods exists in research studies and many are popular and widely approved by the researchers. One such well accepted is survey method. It is extremely used and recommended for social science, communication and media research activities. The present study has espoused the focus group discussion content analysis, survey and interview methods to understand the issues related to the research area. Focus group enabled the researcher to identify the major problems, issues, constraints, advantages in Anna EDUSAT.

3.4 FOCUS GROUP DISCUSSION

The Focus Group discussion was conducted among six groups consisting of various college students from different engineering streams that
are associated with Anna University. It was quite complacent for the researcher to proceed with the various groups’ discussion within the campus just to have a yardstick before designing the questionnaire. In total, six groups were formed by the researcher where 5-6 students participated in each group. In the mid of January 2012, the first discussion started with the students from Easwari College of Engineering, Chennai. As it’s based on a very minimal distance location from Anna University, formalities in getting permission from college authorities for their students participation was quite speedy. After this, other colleges too participated back to back.

This was done consecutively in the fortnight of January 2012 in the video studio of Department of Media Sciences, Anna University, Chennai. Atleast, one participant from each major engineering stream was a part of the discussion which was carefully initiated by the researcher. The colleges belonging to Chennai region were invited for the discussion as it was convenient for the participants. The researcher even conducted focus group discussions with the students of the three colleges that were far away from Chennai. But this discussion happened one hour before giving them the questionnaire to be filled while conducting the survey. The questionnaire was already prepared, so there was no change made in it. The main idea was to retrieve opinions from students which the questionnaire could not supply due to its fixed format and limited space. When orally it was discussed the important points were taken into account which formed a part of this thesis.

Six participants were a part of the first group and to commence the talk the researcher introduced herself to all, along with the topic of study and the purpose behind why they all have assembled. Each participant was asked to introduce themselves. The researcher requested all of them to come forward and give their honest opinions with regard to the various questions raised during the discussion. All were appealed to avoid answering in simple
yes or no terms. Further, all were encouraged to participate live and come out with more ideas to make the debate impermeable. They were all assured that confidentiality will be maintained regarding their opinions and they will not face any threat or sticky situation later by their college authorities for scathing out badly which might be spoken in relation to some question raised during the debate. Once they were comfortable, then the question was raised by the moderator was how actively the partaker has been watching educational videos or channels and what stream they usually follow. Then they were asked regarding watching of Anna EDUSAT videos and it was surprising as most of them had not even heard about it. This resulted in bringing down to general awareness on educational videos rather than getting appropriate opinion about Anna EDUSAT.

Questions like how often they would like to watch such educational videos, whether it was truly helpful to them in academics, what aspect of the content has appealing factors and many more were asked. All the groups had participated enthusiastically and the majority had mentioned the preference to watch the videos on their expediency via internet at home. This was a hint for the researcher that though educational institutions are engrossing in providing educational content to the students during the academic hours, still the likeness to watch over at home, friends place or in friends laptops either downloaded or through the help of CD’s and DVD’s were the most preferred mediums. Some of them were sharing their experiences, while observing the live lecture from their college auditorium. Few of them commended that at the outset it was an enjoyable experience as they were watching live for the first time. They were made to observe the lecture and at the end they got a chance to come live on screen while one of their fellow mates cleared a doubt over phone.
3.5 CONTENT ANALYSIS

Content analysis is a research method used to determine the presence of certain words or concepts within texts or sets of texts. Researchers quantify and analyse the presence, meanings and relationship of such words and concepts, then make inferences about the messages within the texts. Texts can be defined broadly as books, book chapters, essays, interviews, discussion, newspaper headlines and articles, historical documents, speeches, conversations, advertising, theatre, informal conversation, or really any occurrence of communicative language.

The method of content analysis enables the researcher to include large amount of textual information and systematically identify its properties, e.g. the frequencies of most used keywords by detecting the more important structures of its communication content.

The overall purpose of this study was to analyse the effectiveness of Anna EDUSAT videos. This study represents the Anna EDUSAT videos in which the engineering educational contents are depicted. In this study the videos were selected on the basis of a pilot study. The major parameters included audio, video, content and communication. In audio category, noise (muffled), ambience and clarity of speech in the videos were observed.

Similarly, in video section, the technical nuances such as lighting, backdrop, costumes, quality of visuals shown, static versus dynamic shots, sharpness of the picture, usage of animation and graphics along with appealing factors were analysed. In the third category of content a few things like information packed, target audience including syllabus, ease of understanding (structure), vocabulary and how interesting it was for the students were checked. The last and most important was the communication part where factors like delivery (pace) of the expert, body language and facial
expressions, clarity of speech, articulation of sounds, fluency or dis-fluency, repetition, para-phrasing, English and native language slangs presence, and the interactive attempts were discussed.

3.6 SURVEY

Survey was conducted among 700 students those are studying BE courses. It was performed during March to September 2012 as getting permission from college authorities to conduct the survey was an ardent task. The sample populations were chosen from seven colleges as only these seven were actively viewing Anna EDUSAT. The researcher with much difficulty was able to contact these colleges based on the information provided by the Centre for Faculty Development (CFD) at the University which telecasts the Anna EDUSAT live programmes. Though the website of the university showcases the name list of 60 – 70 colleges, only a handful of them were viewing it. Due to official restrictions, the researcher could not approach all the colleges though attempt was made over phone calls. Few of them straight away said no to talk, while some expressed their financial crunch, while some accepted no proper maintenance support. Continuous impediments and not much cooperation from the internal authorities limited the study in its own manner. A useful method for checking a questionnaire and making sure it is accurately capturing the intended information is to pre-test among a smaller subset of target respondents. Hence, in 2011-12 periods was dedicated for a pilot study which covered a few of the regular viewing engineering colleges.

The seven affiliated colleges were selected by the researcher using the purposive sampling technique. Given below are the names of the colleges chosen:

1. Easwari College of Engineering, Chennai,
2. S.K.R. Engineering College, Chennai,
3. Jayam College of Engineering, Dharmapuri,
4. Veltech College of Engineering, Avadi, Chennai,
5. P.S.N.A College of Engineering, Dindigul,
6. Sree Sowdambikai College of Engineering, Arupukotai, and

3.6.1 Sources of Data Collection

The data was collected from both primary & secondary sources. For collection of primary data, a survey was conducted among students and their faculties of different engineering colleges located in Tamil Nadu. Theoretical literatures have been drawn from secondary sources such as different books, magazines, referred journals and various websites. Even a few authorities shared their data with the researcher which in regard helped to have an overall idea about the number of students watching from each branch of engineering subject in count to the total strength of students who are enrolled.

3.6.2 Research Instruments Used

The questionnaires that were used in the study were prepared keeping in mind the works cited in the review of literature in Chapter 2. The questionnaires that were used for the students were semi-structured with both open-ended and closed-ended questions segregated on five-point scale in order to later validate the reliability of the instrument. The teachers’ questionnaire had only open-ended questions. The questionnaires were developed and designed in simple English, for the convenience and easy understanding by students from mother-tongue schools. A useful method for checking a questionnaire and making sure it is accurately capturing the intended information is to pre-test among a smaller subset of target respondents which was also incorporated by the researcher.
3.6.3 Sample Selection for the Study

As the study concentrated on assessing the role and effectiveness of the Anna EDUSAT on the engineering students of Tamil Nadu; the selection of the sample was guided by the above delimitation of the research. Consequently, only engineering college students affiliated to Anna University and those who have watched the Anna EDUSAT video lectures were picked up to be the sample respondents for the study.

3.6.4 Sample Technique

The sample consisted of students from both urban and rural areas who were classified according to the B.E. class they were studying in. Samples were drawn from 2nd & 3rd year B.E classes and the faculties teaching the subjects that were covered by Anna EDUSAT tele-lectures. The sampling method is purposive and from each institution 100 of the respondents were picked up by the researcher for the study purpose. The sample size was 700 students.

A semi-structured questionnaire was used as an instrument for data collection. The data were collected by distributing the questionnaire among the students in the presence of their subject teacher. The researcher also met a few academic experts randomly, to have a personal interaction with them and collected their personal views which comprised with a set of questions related to the research study.

Total number of respondent whose responses were considered for analysis was 700 in number. In all 300 samples were from Chennai that falls under urban category, another 300 from rural where as 100 were from semi-urban. The first three hundred samples were selected from three different areas of Chennai, such as Porur, Avadi and Sriperumbudur. This helped the
researcher to gather data covering three varied locations. While Avadi and Sriperumbudur are on the outskirts of Chennai, it can be included under semi-urban sector; whereas Porur is quite nearer and comes under the heart of the city so it can be fully considered as urban. Similarly, Dharamapuri can fall under semi-urban. Remote Place like Arupukottai can be segmented as rural followed with Dindigul’s and Madurai’s outskirts as semi-urban areas.

As sufficient time was given to interact with the students, the researcher was accompanied by three fellow mates who helped in collecting back the questionnaire. Each one had the responsibility to collect 25 sets back. It was ensured that all the students responded to all the answers and hence there were very less amount of questions that had been left blank. The vacant or unfilled spaces have been accurately taken into consideration and carefully it was entered in the excel sheets. So, all the 700 collected data was utilized for the analysis. This detailed explication enumerates that a multi-stage cluster sampling has been adopted for the purpose of the research study. The data was collected from the period March to September 2012.

3.6.5 Tools Used for Data Analysis

For proper organization of data that was collected from both the methods i.e. focus group and survey. Care was taken to circumspectly identify each questionnaire and entered in excel sheet which was later transformed into SPSS. The data was systematically segregated and coded with suitable tabulations. This research as mentioned, has adopted both qualitative and quantitative study. Hence proper statistical tools like frequency, Chi-square, paired t-test, regression, cross tabulation, ANOVA, etc. had been suitably implied to get the appropriate analysis. The dependent variables have been tested with numerous other independent variables to make the results reliable.
3.7 LIMITATIONS OF THE STUDY

Every research study confines with its own limitations. Similarly, in this study few of the limitations that have restricted the researcher impending further are:

- Only second and third year students formed part of the study and neither the first year nor the final year students were included.

- The analysis and findings of the study are absolutely based on the respondents’ answers as filled in the given questionnaires. Obviously, this restricts the researcher’s expectations into a balance stage as neutrality and fair practice was adopted. The limitation lies when some of the respondents try to elaborate a specific question whereas some just answer with a single word or line. So it’s difficult to specify the tendency of the respondent to answer as per one’s expected concurrence.

- Study got restricted to seven engineering colleges only. If more representations could have been made, more interpreted results could have been expected.

- Last but not the least; the study was confined to the engineering students who can watch Anna EDUSAT from Tamil Nadu state only. Hence, the findings of the study can be used in other places with necessary precautions.