Chapter 3

Research Design, Objectives and Steps in the Study

“The difference between design and research seems to be a question of new versus good. Design doesn’t have to be new, but it has to be good. Research doesn’t have to be good, but it has to be new. I think these two paths converge at the top: the best design surpasses its predecessors by using new ideas, and the best research solves problems that are not only new but worth solving. So ultimately design and research are aiming for the same destination, just approaching it from different directions”- Paul Graham, ‘Hackers & Painters: Big Ideas from the Computer Age’

3.1 Introduction

Since this research seeks to design and develop an effective Intervention program to enhance the transformational leadership style of potential leaders in the Indian context, the exploratory, descriptive, experimental and longitudinal research designs have been used to fulfill the objectives in each part of the study.

3.2 The Research Design

The major objectives of the study are to:

1. Find out the major interpersonal skills required for effective transformational leadership style in the Indian context.

2. Design the intervention program with the help of subject and methodology experts and Pilot Test the Intervention Program to enhance the transformational leadership style of potential leaders in the Indian context.

3. Test the intervention program under experimental conditions.

4. Conduct a longitudinal study to assess the effectiveness, impact and usefulness of the Intervention Program after fourteen months of conducting the same.
Designing Interpersonal Communication Modules For Effective Transformational Leadership Style

Keeping in mind the above objectives, the present study attempts to address the necessity for a research based approach to develop an effective intervention program for enhancement of transformational leadership style in the Indian context through the use of major interpersonal communication skills. Moreover, the intervention program should be effective not only in the short term but also leave a significant impact and prove to be useful in the long term too.

Since the objectives of the research were different in all the four parts the search for an answer led to the research plan requiring the research to be conducted in four parts.

Part I: A Survey to find out the major interpersonal skills required with a view to design an Intervention program for effective transformational leadership style in the Indian context for potential leaders.

Part II: Preparation of the final Intervention Program based on the experts’ validation and quantitative and qualitative analysis of the results of the Pilot Test of the Intervention Program conducted.

Part III: Testing the effectiveness of the Intervention Program under experimental conditions by administering the posttest after 20 days of conducting the Intervention Program.

Part IV: Longitudinal Study-(Follow-Up Feedback) to assess the Long Term effectiveness, impact and usefulness of the Intervention Program after fourteen months of conducting the same.

3.2.1 Part I-The Survey

In the Survey the descriptive research design was used. The survey relies on *ex-post facto* demographic data. Respondents come with pre-existing characteristics and experiential backgrounds.

The Survey aims to find out the most effective interpersonal skills required for effective transformational leadership style in the Indian context. One set of questionnaire was personally administered to the managers (Superiors) and collected by the researcher. The Indian Transformational Leadership Scale too was personally administered to the direct
subordinates or direct reports of the managers (Superiors) and collected by the researcher. The managers (Superiors) were asked to answer a questionnaire on Interpersonal skills. Their subordinates were administered the Indian Transformational leadership Scale to ascertain the transformational leadership score of the manager (superior) to whom they directly reported to.

Chapter 4 details the Survey conducted.

3.2.2 Part II-The Intervention Program

The intervention program is developed and designed based firstly, on the survey results. Secondly, it was improved upon by incorporating the feedback from subject and methodology experts. And finally, the intervention program was redesigned to increase its efficacy by using the results of the quantitative and qualitative analysis of the pilot test conducted on a batch of 30 participants.

Subsequently, the redesigned intervention program was tested for its efficacy firstly, by conducting it under experimental conditions. And secondly, a longitudinal study was conducted after fourteen months to ascertain its long term effectiveness, impact and usefulness.

The design guides the development and selection of content and strategies; and measurement of the effectiveness, impact and usefulness of the intervention in the short, as well as, the long term.

Chapter 5 details the Intervention Program.

3.2.3 Part III-The Experiment

Testing the intervention program has been done using the experimental design. The experimental design is considered the most reliable of research designs. The experiment seeks to study the effects of an independent variable (in this case the ‘Intervention Program’) on the dependent variable-on the performance of the group experiencing it (enhancing their transformational leadership style in the Indian context). The strength of any experiment lies in its replicability and so, all details of the conditions under which the experiment was conducted have been made available.
Diagram of pretest posttest design without control group used in the study:

\[ RO_1 \rightarrow X_1 \rightarrow O_2 \]

Where the randomized sample is given a pretest \((O_1)\), the independent variable \((X_1)\) is manipulated and then the sample is given a posttest \((O_2)\).

The effectiveness of the intervention program was first measured after 20 days of conducting the ‘Main Session’ of the Intervention Program and then reassessed after fourteen months in the longitudinal study.

The impact of gender on the effectiveness of the intervention program is also analyzed.

Chapter 6 details the experiment carried out.

### 3.2.4 Part IV-The Longitudinal Study

The effectiveness, impact and usefulness of the Intervention Program was further assessed and verified over the long term by administering the follow-up feedback questionnaire to the participants of the Intervention Program after fourteen months of conducting the same.

Chapter 7 details the longitudinal study conducted.

### 3.3 The Sample

Since the research has been conducted in four parts, each part calls for a sample of the relevant target population. The core of the research is the preparation of an Intervention Program that is addressed to those individuals perceived as potential transformational leaders.

The ultimate target population is large and diverse. The study limits itself to looking at potential leaders within Mumbai. Such individuals may currently be ‘preparing to lead’ (now in educational institutions) or out in the world of work demonstrating their transformational leadership potential.

The number of institutions and organizations are numerous and it would not be feasible to access all of them. It was decided to reach out to those who were accessible at the various stages of the research.

Swati Mankad
3.3.1 Part I- The Sample for the Survey

Sample consisted of 35 Managers (Superiors)-Subordinate dyads of executives selected by using Stratified Random sampling from various sectors. The sample design was also purposive and convenience. The samples were taken from Mumbai as well as a Tier II city (Vadodara-Gujarat) thereby including a larger cross section of the population. The sectors included were Fast Moving Consumer Goods industry, education, banking, heavy engineering, retail, Information Technology and film direction. The researcher approached several organizations and randomly chose individuals at various supervisory and managerial cadres. The researcher administered and collected the questionnaire personally from the respondents.

Table No 3. 3.1.1: Demographic Information of Managers (Superiors) of the Survey

<table>
<thead>
<tr>
<th>Terms in the Schedule</th>
<th>Explanation of Terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Whether the respondent is male/female</td>
</tr>
<tr>
<td>Age</td>
<td>Age groups in 5 ranges starting from 18-30, 31-40, 41-50, 51-60, &gt;60</td>
</tr>
<tr>
<td>Designation:</td>
<td>Respondent’s position in their organization</td>
</tr>
<tr>
<td>Educational Qualifications</td>
<td>Respondent’s educational qualification-Graduate, Postgraduate, or Doctorate</td>
</tr>
<tr>
<td>Area of Specialization/Industry</td>
<td>Respondent’s functional specialization and the industry s/he works in</td>
</tr>
<tr>
<td>Work Experience</td>
<td>Respondent’s professional work experience</td>
</tr>
</tbody>
</table>

3.3.2 Part II-The Sample for the Pilot Test of the Intervention Program

The ‘Pilot Test’ of the Intervention Program was conducted on a batch of 30 participants enrolled in Postgraduate course in Management.
### Table 3.3.2.1: Demographic Information of the Participants of the Pilot Test of the Intervention Program

<table>
<thead>
<tr>
<th>Terms</th>
<th>Explanation of the Terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of the Institute</td>
<td>Institute the participant is currently enrolled in</td>
</tr>
<tr>
<td>Course</td>
<td>Course that s/he has currently enrolled in</td>
</tr>
<tr>
<td>Age</td>
<td>The participants’ age</td>
</tr>
<tr>
<td>Gender</td>
<td>Whether male or female</td>
</tr>
<tr>
<td>Roll number</td>
<td>Roll number of the participant</td>
</tr>
<tr>
<td>Email id</td>
<td>The email address of the participant</td>
</tr>
<tr>
<td>Contact number</td>
<td>The mobile number of the participant</td>
</tr>
<tr>
<td>Educational Qualifications</td>
<td>Participants’ educational background</td>
</tr>
<tr>
<td>Work experience</td>
<td>If the participant has previous work experience</td>
</tr>
<tr>
<td>Industry Specialization</td>
<td>Work experience in any particular sector</td>
</tr>
<tr>
<td>Functional Specialization</td>
<td>Work experience in which department- sales, accounts, Human Resource etc</td>
</tr>
</tbody>
</table>

3.3.3 Part III- The Sample for the Experiment

The sample for the experiment was selected from amongst the students of management institutions. In all **313 participants** were randomly divided into **12 experimental groups**. Each experimental group consisted of not more than 30 participants.

In order to get naturally occurring groups of potential leaders, several management institutes were approached for permission to conduct the Intervention Program for their students. Most institutes of Management have a very tight schedule and were apprehensive about being able to accommodate the researcher, especially since the experiment had to be conducted while the participants had to complete several team projects and assignments. Therefore, those institutes who were able to accommodate were selected.
3.3.4 Part IV-The Sample for the Longitudinal Study

The sample for the longitudinal study was **100 participants from the experimental groups of the intervention program already conducted by this researcher**. The participants were administered the follow-up feedback questionnaire to assess the effectiveness, impact and usefulness of the intervention program after fourteen months.

Table 3.3.4.1: The Demographic Information of the Participants of the Longitudinal Study of the Intervention Program

<table>
<thead>
<tr>
<th>Terms in the Questionnaire</th>
<th>Explanation of the Terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Name of the participant</td>
</tr>
<tr>
<td>Roll Number</td>
<td>Roll number of the participant</td>
</tr>
<tr>
<td>Course</td>
<td>The name of course the participant was enrolled in</td>
</tr>
<tr>
<td>Gender</td>
<td>Whether the participant is male or female</td>
</tr>
<tr>
<td>Whether working or not</td>
<td>Whether the participant is currently employed or not</td>
</tr>
<tr>
<td>Name of the Organization</td>
<td>Organization the participant is working for</td>
</tr>
</tbody>
</table>

3.4 Tools Used in the Study

3.4.1 Part I-The Survey

a) Questionnaire personally administered to the managers (Superiors) and collected by the researcher (Appendix D).

**Survey Schedule Validation**

Questionnaire for Superiors was validated by content and methodology experts (Appendix B).

b) Indian Transformational Leadership Scale –The ‘Rater Form’ (Appendix E) which was administered to the Subordinates /direct reports to find out the Indian Transformational Leadership Scale score of their Managers (Superiors).

**Validation of the Indian Transformational Leadership Scale**

The Indian Transformational Leadership Scale is tested for validity through **Cronbach Alpha** with a result of **0.937**, which indicates a high degree of reliability.
The Indian Transformational Leadership scale is a 30 item scale. The items are rated on a 5-point Likert scale with anchors labeled: not at all 0 (Not at all), 1 (once in a while) 2 (sometimes), 3 (fairly often), 4 (frequently, if not always). The higher the scores the more effective a leader is as a transformational leader. Respondents (subordinates/direct reports) of the survey were asked to answer the questionnaire by rating the frequency with which the immediate supervisor displayed the behaviors listed. The scale is in two forms—the ‘Self form’ and the ‘Rater form’.

3.4.2 Part II – The Intervention Program
The ‘Self-form’ of the Indian Transformational Leadership Scale was administered to the participants of the Pilot Test as Pretest and Posttest (Appendix G).

3.4.3 Part III – The Experiment
The ‘Self-form’ of the Indian Transformational Leadership Scale was administered to the participants of the experiment as Pretest and as Posttest after 20 days of conducting the ‘Main Session’ of the Intervention Program.

3.4.4 Part IV – The Longitudinal Study
The Follow-Up Feedback Questionnaire (Appendix F) was administered to the participants of the Intervention Program after fourteen months of conducting the Intervention Program. This was validated by subject and methodology experts. The questionnaire was intended to assess the effectiveness, impact and usefulness of the Intervention in the long term that is after fourteen months of conducting the intervention program.

3.5 Procedures and Data Collection

Procedures followed at the different parts of the research are described in this section.

3.5.1 Collection of Survey Data
Survey data was collected from pairs of managers (Superiors) and their subordinates of commercial organizations. The researcher approached several organizations and institutes. Individuals were randomly chosen at various supervisory and managerial
cadres. The sectors included were education, heavy engineering, retail, banking, IT firms, filmmaking and Fast Moving Consumer Goods. The respondents were from Mumbai as well as a Tier II city (Vadodara-Gujarat) thereby including a larger cross section of the population.

The companies were approached and were explained the purpose and nature of research. The respondents were also assured of confidentiality of the results to enlist their cooperation and therefore the questionnaires and the scale were personally administered and collected by the researcher. They were contacted at a time convenient to them. The managers (superiors) were asked to complete the Interpersonal skills questionnaire and their subordinates the Indian transformational leadership scale to assess their Superiors’ score on the Indian Transformational Leadership Scale. Organizations from different sectors were contacted. Also, managers from different functional specializations were randomly selected to get data from managers with diverse experiences, perceptions, age groups, educational qualifications; and functional and industry specialization.

3.5.2 Procedure for Developing the Intervention Program

The intervention program has been prepared using the ADDIE design process. The five basic steps which form the (ADDIE) design process are:

1. **Analyze**
2. **Design**
3. **Develop**
4. **Implement**
5. **Evaluate**

During the **analysis** phase, the designer determines the need for instruction, behavior and processes the learner needs to exhibit depending on the findings of the survey. In this case the target population is a sample of potential transformational leaders. The profile sample is prepared after the survey data is analyzed. This guides the researcher in developing an appropriate program.

During the **design** phase, content that will serve the objectives are explored and selected and a sequencing of content, along with strategies appropriate to each is selected to prepare the final blueprint of the intervention program (in this case—an overall program objective of enhancing the effectiveness of the transformational leadership style of...
potential leaders in the Indian context in not only the short term but also in the long term).

During the development stage the researcher needs to translate data, objectives and the tests to be applied into learning events and activities which will result in the desired participant performance. Here the concept of experiential learning has been incorporated.

During the implementation phase the program is delivered to a sample of the target population.

Finally, the intervention program is evaluated for its effectiveness in the short term as well as the long term in achieving its objectives for the target population.

The following are the steps involved in the preparation of the Intervention Program.

Development of the intervention program has the following sequence:

- Framing the objectives of the modules
- Selecting the content to achieve these objectives
- Selecting a suitable method and appropriate strategies
- Sequencing the activities
- Preparing/sourcing the instructional materials-exercises
- Preparing a written plan of action with content and exercises
- Content validation and suggestions by experts on the ‘plan of action’.
- Pilot Test of the completed Intervention Program
- Statistical data analysis of quantitative data and qualitative in-depth feedback from the pilot test participants
- Suitable modification of the intervention program

While the initial steps were completed by the researcher with information available in the literature and the help of the research guide, the validation of the intervention program required involving experts.
3.5.2.1 Selection of Content
The participants are explained the components of the Indian Transformational Leadership Scale during the Intervention along with the core modules consisting of major interpersonal communication skills of Teaming, Motivating, Listening, Providing Feedback, and Promoting and Managing Resistance to Change.

3.5.2.2 Selection of Methods/Strategies/Activities
A majority of participants in this workshop came from a formal education background. Their prior education has been in diverse fields like Humanities, Science, Commerce, Engineering, Information Technology and Hospitality. Their learning experience, in most cases was one of classroom ‘chalk and talk’ methodology (with exception of students of Science and Technical background).

The researcher cum facilitator’s experience in teaching has shown that such participants are generally more comfortable with and benefit more from an engaging combination of the conventional and the creative. It was decided to provide a blend of the traditional and the unusual. The intervention program centers around the ‘workshop’ method and the concept of experiential learning.

3.5.2.3 Content Validation of the Intervention Program
The following were given to experts in management, training & development, transformational leadership and education for validation:

- A short write up on the subject which included-Transformational Leadership
- Objectives of the Intervention Program
- Description of the intended target population
- The ‘Plan of Action’
- A copy of the Self rating form and other exercises
- A copy of the draft power point presentation.

Experts were requested to provide critical comments and suggestions on:

- Relevance of content selected to the objectives of the program
- Suitability of role plays and exercises
- Sequencing of content and exercises
3.5.2.4 Pilot Test of the Intervention Program

The prepared Intervention program was pilot tested on one batch of 30 participants in two sessions, first the ‘Main Session’ and after 10 days the ‘Evaluation Session’. The facilitator played a dual role-conducting the session as well as observing and interacting with the participants to understand how learning was progressing.

Results from the data analysis of the pilot test, suggestions, feedback from the participants and observations by the facilitator from the ‘Pilot Test’ were incorporated to prepare the final redesigned intervention program used in the experiment.

3.5.3 Procedure for Testing the Intervention Program-The Experiment

1. The senior students of management colleges were informed about the intervention program
2. A schedule for conducting the experiment was prepared, with the cooperation of the college authorities.
3. The ‘Main Session’ of the intervention program was conducted with the experimental groups on the days allocated for each class.
4. The ‘Refresher Session’ and the ‘Evaluation Session’ too were scheduled accordingly.
5. The Posttest was administered after 20 days of the ‘Main Session’ during the ‘Evaluation Session’. This was self-scored by the participants.
6. The facilitator offered her follow-up services and counseling to interested participants.
3.5.4 Procedure for the Longitudinal Study
The researcher personally contacted 100 participants of the intervention program and administered and collected the follow-up feedback questionnaire to assess the effectiveness, impact and usefulness of the intervention program after fourteen months of conducting the same.

3.6 Statistical Procedures Used

3.6.1 Part I-The Survey
SPSS was used for descriptive statistics for the data collected in the Survey.

3.6.2 Part II-The Intervention Program
SPSS was used for the quantitative analysis. Paired $t$-test was done to assess the effectiveness of the intervention program.

Results were tested at Confidence Level of 95%.

3.6.3 Part III-The Experiment
SPSS was used for quantitative analysis. Chi-Square, $t$-test (paired and independent) and one-way ANOVA were applied to test the hypotheses.

Results were tested at Confidence Level of 95%.

3.6.4 Part IV-The Longitudinal Study
SPSS was used for descriptive statistics for the data collected in the longitudinal study.

3.7 Qualitative analysis
Qualitative analysis was conducted for all four parts of the research study.

3.8 Conclusion
All attempts have been made to ensure that prescribed procedures have been adhered to while planning and conducting the research.

The following chapters (4, 5, 6 and 7) describe in detail all the four parts of the study.