

# **Chapter 3**

## **Research Methodology**

### 3.0 Introduction

This chapter provides the methodological approach adopted by the researcher to realize the objectives of the study. As the study was conducted in various phases, this chapter accordingly highlights upon the methodological approaches in each phase of the study. It includes the statement of the problem, objectives of the study, explanation of terms, context of the study, research design, selection of sample, tools and techniques employed, various phases of the study, data collection and data analysis procedures of the study.

### 3.1 Statement of the Problem

Development of an e-Learning Program for Enhancing Professional Competencies of Secondary School Principals in the State of Assam.

### 3.2 Objectives of the Study

- i. To identify the Training needs of Secondary School Principals in the State of Assam
- ii. To develop an e-Learning program for Enhancing Professional Competencies of School Principals.
- iii. To Study the Effectiveness of e-Learning program in terms of its relevance, adaptability and professional enrichment among the School Principals.

### **3.3 Explanation of the Terms**

#### ***3.3.1 Training Needs***

Those needs inclusive of Knowledge and Skill required for a Principal to perform/ exercise leadership roles in school management.

#### ***3.3.2 Professional Competencies***

In this study Professional Competencies refers to a set combination of Knowledge, Skills and Experiences that enhances the effectiveness of a School Principal to perform the task responsibility areas.

#### ***3.3.3e-Learning program***

e-Learning refers to the program developed by the researcher exclusively for the purpose of the professional development of the school principals based on their needs identified by considering the principles of adult learning and the techno-pedagogic interface.

#### ***3.3.4 Effectiveness of e-Learning Program***

Here the word effectiveness of e-Learning program refers to the relevance, adaptability and professional enrichment as opined by the participating School Principals

#### ***3.3.5 Principals***

Principals refer to the Headmasters / Principals of the Govt. and Govt. aided Secondary Schools and Higher Secondary Schools recognized by the Board of Secondary Education, and the Higher Secondary Education Council, in the State of Assam.

### **3.4 Delimitation of the Study**

The study was delimited to Principals of Govt. and Govt. aided Secondary School in the State of Assam as identified by the researcher and recommended by the Rashtriya Madhyamik Siksha Abhijan, Assam.

### **3.5 Context of the Present Study**

The present study is conducted in the state of Assam. Assam is the gateway to the seven sister states in the north eastern region of India and has a diverse population spread across fertile plains of Brahmaputra valley, Barak valley and the hills districts. Assam has 27 districts and is surrounded by six of the seven sister states: Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland and Tripura, which originally were all part of Assam.

The state of Assam has 7626 numbers of schools catering to the requirement of secondary education (SEMIS-STRC 2013-14 DISE) out of which there are 4574 Govt. / Govt. aided secondary schools (SEMIS 2010-11, RMSA Assam). The qualification for the post of school heads being Graduate degree and B.Ed. with an experience of 10 years in teaching for the secondary schools and Post Graduate degree with an experience of 10 years for the higher secondary schools. In many secondary schools, however, the position of school head is lying vacant and being managed by a senior teacher as in-charge of the same. There are no professional courses in Assam specifically meant for school Principalship/ preparing school leaders. Presently the in-service professional development of school heads is taken care of by RMSA with workshops and training sessions being conducted for a period of 1-7 days. Few school heads are also

recommended for professional development programmes conducted by NUEPA, New Delhi.

The purpose of this study was to develop and implement an e-Learning program for enhancement of professional competencies of school principals. And in order to develop such learning programs, it is necessary to identify the training needs in context of the task responsibility areas of the school principals.

Therefore, the researcher with administrative support of the Rashtriya Madhyamik Siksha Abhijan, Assam made sincere effort to conduct a survey to identify the professional development needs of the school principals. The researcher also met officials and academic officers from RMSA, the Directorate of Secondary Education, the Board of Secondary Education and SCERT to gain sufficient insight on the same. From the above activities the researcher could identify specific areas on which there was a felt need among the school principals for professional development. And accordingly the researcher developed the content for the self learning e-Learning program and after validating the same, the contents were digitized in the form of CD-ROM. The e-Learning program so developed was then implemented on a group of school principals as recommended by the RMSA, and the effectiveness of the program was studied.

### **3.6 Research Design**

This study was given due importance by the RMSA authorities as well as the Directorate of Secondary Education, Assam due to the fact that RMSA was in the process of conducting training workshops for school principals with the help of Don Bosco Institute, Guwahati. During the initial stage of the study the researcher also attended the 7 days state level training workshop for school principals with a view to observe the same and

interact with the participating school principals. This exercise provided the researcher with some useful learning experiences.

The focus of this study was to develop and implement an e-Learning program for enhancement of professional competencies of school principals. First, the researcher set a strong basis for the study. And the study was conducted in different phases. In the first phase the researcher identified the training needs of school principals using the Principals Professional Development Need Assessment Questionnaire (PPDNAQ). The responses so obtained after administering the PPDNAQ were analyzed quantitatively and qualitatively. In the second phase the researcher developed self-learning modules covering the task responsibility areas as identified in phase 1. In the third phase these modules were validated by seeking expert opinion and the same was digitized during the fourth phase of the study. During the fourth phase itself, the digitized modules were tried out over a group of school principals. And based upon the feedback, the researcher made necessary changes to the e-Learning program and carried out the experimentation during the fifth phase of the study. The experimentation was conducted for a period of 60 days. During the final phase i.e. the 6<sup>th</sup> of the study the researcher sought feedback and opinions about the e-Learning program using a Feedback Form, from the school Principals on the effectiveness of the e-Learning program. The following Table-1 elaborates upon the different phases of this study.

**Table: 1 Phases of the Study**

<b>Phases</b>	<b>Objective</b>	<b>Description</b>
<b>I</b>	Identification of Training Needs of the School Principals	<ul style="list-style-type: none"> <li>- Document Analysis and Review.</li> <li>- Developing the Tool “Principals Professional Development Needs Assessment Questionnaire” (PPDNAQ)</li> <li>- Conducting Pilot Study</li> <li>- Conducting a survey administering the PPDNAQ on a sample of 100 school principals as identified by RMSA.</li> <li>- Informal interviews.</li> </ul>
<b>II</b>	Content Development	Based on the outcome of the study conducted during the 1 <sup>st</sup> phase, the content for the e-Learning program was developed.
<b>III</b>	Validation	The content of the e-Learning program was validated by seeking opinions from experts of SCERT and RMSA as well as retired Principals.
<b>IV</b>	Development of e-Learning program  Try out	<p>The content so developed and validated in 2<sup>nd</sup> and 3<sup>rd</sup> phase were digitized with the help of technical experts and made available in the form of CD-ROMS.</p> <p>The e-Learning program was tried out on a group of 10 school principals and feedback was taken to make necessary corrections.</p>
<b>V</b>	Implementation of e-Learning Program	The e-Learning Program was implemented on a group of 35 school principals as identified by RMSA. The implementation was carried out for a period of 60days.
<b>VI</b>	Study Effectiveness of the e-Learning program	Feedback Forms were distributed among the participating school principals to seek their opinion about the e-Learning program. Informal interviews were also conducted to study the effectiveness of the e-Learning Program

### 3.7 Population

School heads belonging to the Govt./ Govt. aided secondary and higher secondary schools in the state of Assam was the population of the study. Appendix IV shows the number of secondary schools in the state of Assam.

### 3.8 Sample and Sampling Technique for the Study:

As this study involved various phases, hence multi-stage sampling was technique was used to select the sample for the study. The following table-2 shows the sampling technique adopted during different phases of the study.

**Table: 2 Sampling Techniques Adopted During Different Phases of the Study**

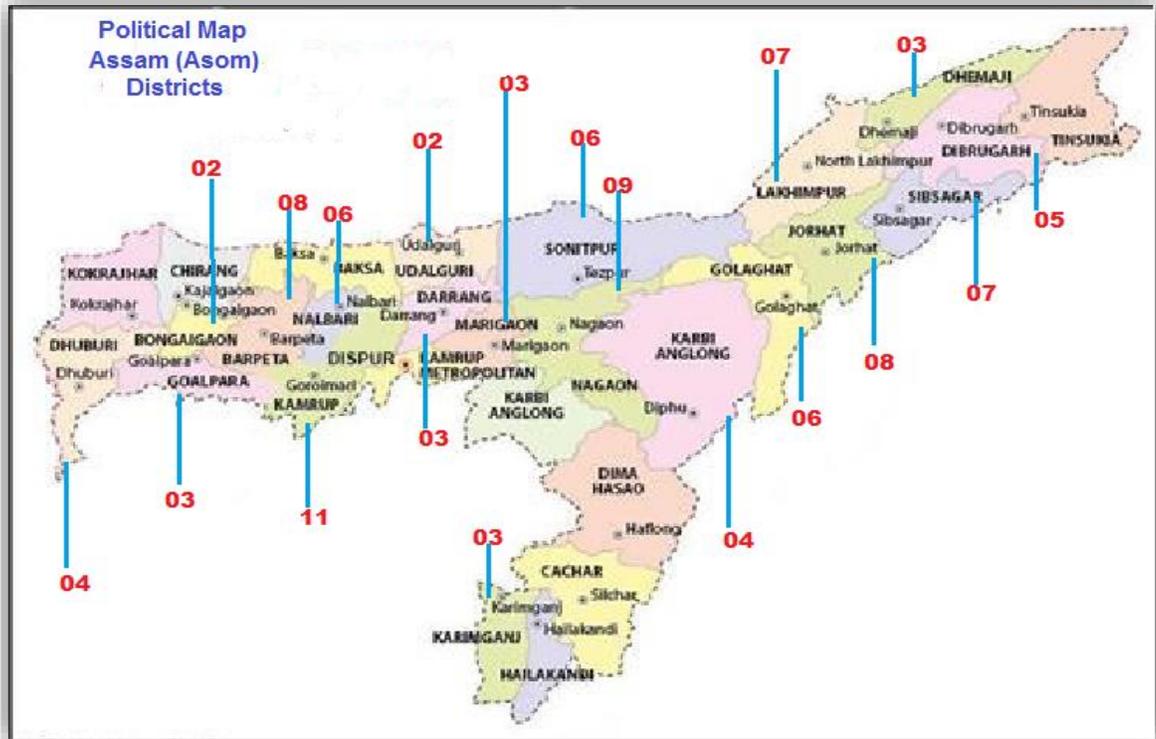
Phase	Objective	Sample & Size	Sampling Technique
I	Identification of Training Need	100 School Principals	Purposive Sampling
IV	Try out of e-Learning Program	10 School Principals	Convenience Sampling
V & VI	Implementation of e-Learning Program and studying its effectiveness	35 School Principals	Purposive Sampling

**Phase I:** During the first phase of this study i.e. identification of training needs of the school principals, the researcher adopted purposive sampling technique based upon the following criteria:

1. Consistently poor performing schools in terms of student's performance were identified.
2. RMSA Assam was approached for necessary administrative support in with a request for permission to conduct the survey of such schools.

- The principals of the 100 secondary schools spread across 20 districts of Assam as recommended by RMSA constituted the sample during the first phase of the study.

**Figure- 5 District-wise Distribution of Sample during First Phase of the Study**



(Source: [www.assamonline.in](http://www.assamonline.in))

Following tables (Table-4 to Table-7) shows the profiles of the principals selected as sample for the first phase of this study.

**Table 3: Age and Gender of the Sample Principals**

Gender →	Male		Female		Total
Age	<45 yrs	> 45 yrs	<45 yrs	> 45 yrs	-
<b>Distribution of Sample</b>	43	36	16	05	100

The sample during the first phase of the study constituted of 79% males and 21% females. 54.5% of males and 76.2% of the females were below the age of 45 years.

**Table 4: Educational Qualification of the Sample Principals**

Education	UG		PG		Total
	Yes	No	Yes	No	
<b>Professional Qualification (B.Ed.)</b>	Yes	No	Yes	No	-
<b>Distribution of Sample</b>	73	0	22	05	100

73% of the sample principals having a University degree also had B.Ed., while 22% of the sample principals were Post graduates with B.Ed. 5% of the sample principals were post graduates without B.Ed.

**Table 5: Computing Skill and Prior Professional Development of Sample Principals**

Computing Skill	Yes		No		Total
	Yes	No	Yes	No	
<b>Attended PD Program</b>	Yes	No	Yes	No	-
<b>Distribution of Sample</b>	53	34	06	07	100

87% of the sample principals had working knowledge on computers and 53% of the sample principals in addition to having computing knowledge also had participated in in-service professional development program.

**Table 6: Experience of Sample Principals**

Teaching	10-15 yrs		>15 yrs		Total
	<5	>5	<5	>5	
<b>As Principal</b>	<5	>5	<5	>5	-
<b>Distribution of Sample</b>	51	28	17	04	100

79% of the sample principals had teaching experience between 10-15 years. 68% of the sample principals had less than 5 years of working experience as principals.

**Phase IV:** During this phase, the content of the e-Learning program was tried out on a group of 10 secondary school principals. The researcher adopted convenience sampling technique during this phase in order to reach out to those principals which were in close proximity to the researcher, hence accessible.

**Phases V & VI:** In order to implement the e-Learning program and study its effectiveness, the researcher employed purposive sampling technique on the basis of the following criteria:

1. Principals having working knowledge on computers.
2. Internet connectivity in area where the school belonged (both rural and urban).
3. Secondary schools located in adjoining districts of the researcher's home district of Kamrup (Metro)
4. Principals of 35 secondary schools constituted the sample during this phase of the study.

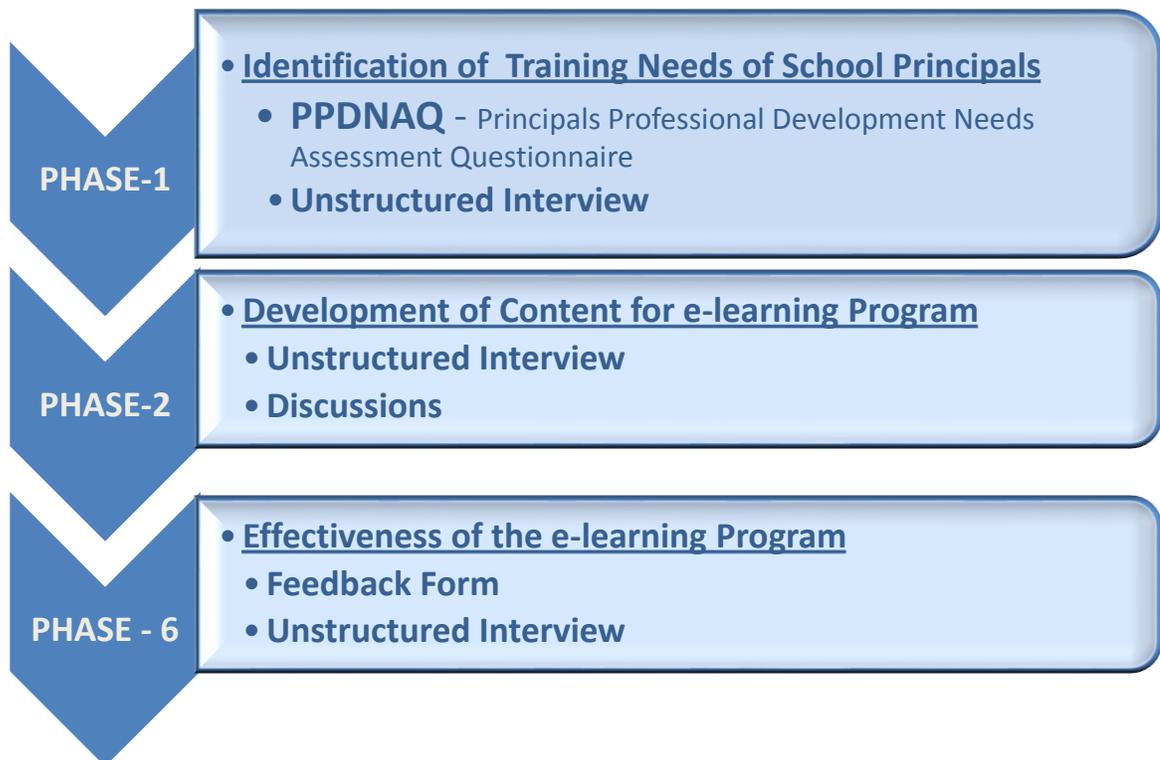
Table-7 given below shows the district wise distribution of sample.

**Table-7 District wise Distribution of Sample Principals during the Sixth Phase of the Study**

Districts	Darrang	Goalpara	Kamrup Kamrup (Metro)	Morigaon	Nagaon	Nalbari	Sonitpur
Sample	05	05	05	05	05	05	05

### 3.9 Research Tools and Techniques

The researcher developed different tools and adopted different techniques for data collection, going by the nature of the study which was conducted in phases. A detailed description of the same phase-wise is provided below and the same is also illustrated in Figure-6.



**Figure-6: Research Tools and Techniques used during different Phases of the Study**

#### 3.9.1 Principal's Professional Development Needs Assessment Questionnaire (PPDNAQ)

This questionnaire was developed by the researcher for the present study and it contained a list of tasks that a Principals of a Secondary school are expected to perform in order to exercise their leadership position in the Schools. A total of 149 items belonging to

different areas of school management and leadership was included in this questionnaire. These items were categorized into various dimensions of school management namely the General Management Tasks, Curriculum Management Tasks, Personnel Management and Community Partnership Tasks, Financial and Material Management tasks and Management of Information Related Tasks of the school principal. These categories were further divided into various dimensions that best describes the task responsibility areas of a school principal. Each such dimension had items that relates to a specific task of the school principal. And against each item (statements defining a specific task of the school principal) was given a 5 point rating scale anchored at 5 = “Strongly Agree”, 4 = “Agree”, 3 = “Undecided”. 2 = “Disagree” and 1 = “Strongly Disagree”. The items contained in the PPDNAQ were validated by experts from the State Council of Educational research and Training (SCERT), Board of Secondary Education, Assam (SEBA), Assam Higher Secondary Education Council (AHSEC) and RMSA, Assam. Further, the PPDNAQ was modified by conducting a pilot study. A copy of this tool is given in Appendix II

Initially the researcher identified the task responsibility areas of the school principals and then developed 179 items in all the 7 dimensions which was arrived at after necessary review of similar studies conducted in India and abroad. The tool so developed by the researcher was named “Principals Professional Development Need Assessment Questionnaire” (PPDNAQ).

A Pilot study to validate the tool with respect to its relevance, applicability, clarity and purpose etc. was conducted. The PPDNAQ was administered upon a group of 30 serving school principals of Govt./ Govt. aided secondary schools and 05 retired school

principals. The researcher came in touch with the group of principals during the 7 day state level residential training for principals on school management and leadership organized by RMSA. The school principals were approached by the researcher during the said workshop and the draft PPDNAQ was explained to them. The researcher also took the opportunity to continuously interact with the principals in order to know in details about their work profile, their duties and responsibilities and accordingly take note of the same towards enriching the PPDNAQ with more relevance. 5 retired school principals who were known personally to the researcher were also approached for the pilot study, in order to know their perspectives based on their experience of having successfully led such Govt. secondary schools.

Expert opinion was also taken from expert belonging to SCERT, SEBA, ASHSEC, RMSA and Directorate of Secondary Education, Assam. Retired Govt./ Govt. aided secondary school principals with proven track record were also consulted in order to know about their perspective on Principalship.

The feedback obtained from the pilot study helped the researcher to bring down the total number of items from 179 to 149 based upon suggestions to remove items which were repetitive in nature and those not found to be important in context of Assam. Also certain items were added which were not included before. Thus the PPDNAQ was duly incorporated with necessary changes as arrived from the pilot study.

### **3.9.2 Unstructured Interviews and Discussions**

The researcher conducted personal interviews to understand the various task responsibility areas of a school principal and to gain sufficient insight into their professional development needs as perceived by various departmental heads such as the

Inspector of Schools, Programme Coordinator and District Consultants of RMSA, Academic Officer of SCERT and SEBA as well as the School Principals. Personal interviews were also conducted with retired principals who demonstrated commendable service record as school heads.

The purpose of conducting the unstructured interviews during the initial phases of this study was to derive further understanding on the problems as encountered by the researcher from time to time. The same technique was also helpful to the researcher during the content development of the e-Learning program. Discussions were held with retired principals on the content being developed, and their feedbacks were taken and the same was duly incorporated in terms of their experiences which were helpful to the researcher to provide as examples.

Further during the development of the e-Learning program especially when the researcher engaged with the software developer, such informal discussions led to the development of understanding between the developer and the researcher. This in turn helped in arriving at an appropriate design of the e-Learning program in terms of navigation and usability, providing user-friendliness and developing set of instructions.

During the implementation phase the researcher engaged with the participating principals and often interacted with them, interviewed them to understand difficulties, if any, and help them overcome the same while accessing the e-Learning program. While studying the effectiveness of the e-Learning program, apart from the feedback form where the participating principals provided their opinion on their experience in using the e-Learning program, the researcher also engaged in unstructured interviews and discussions to

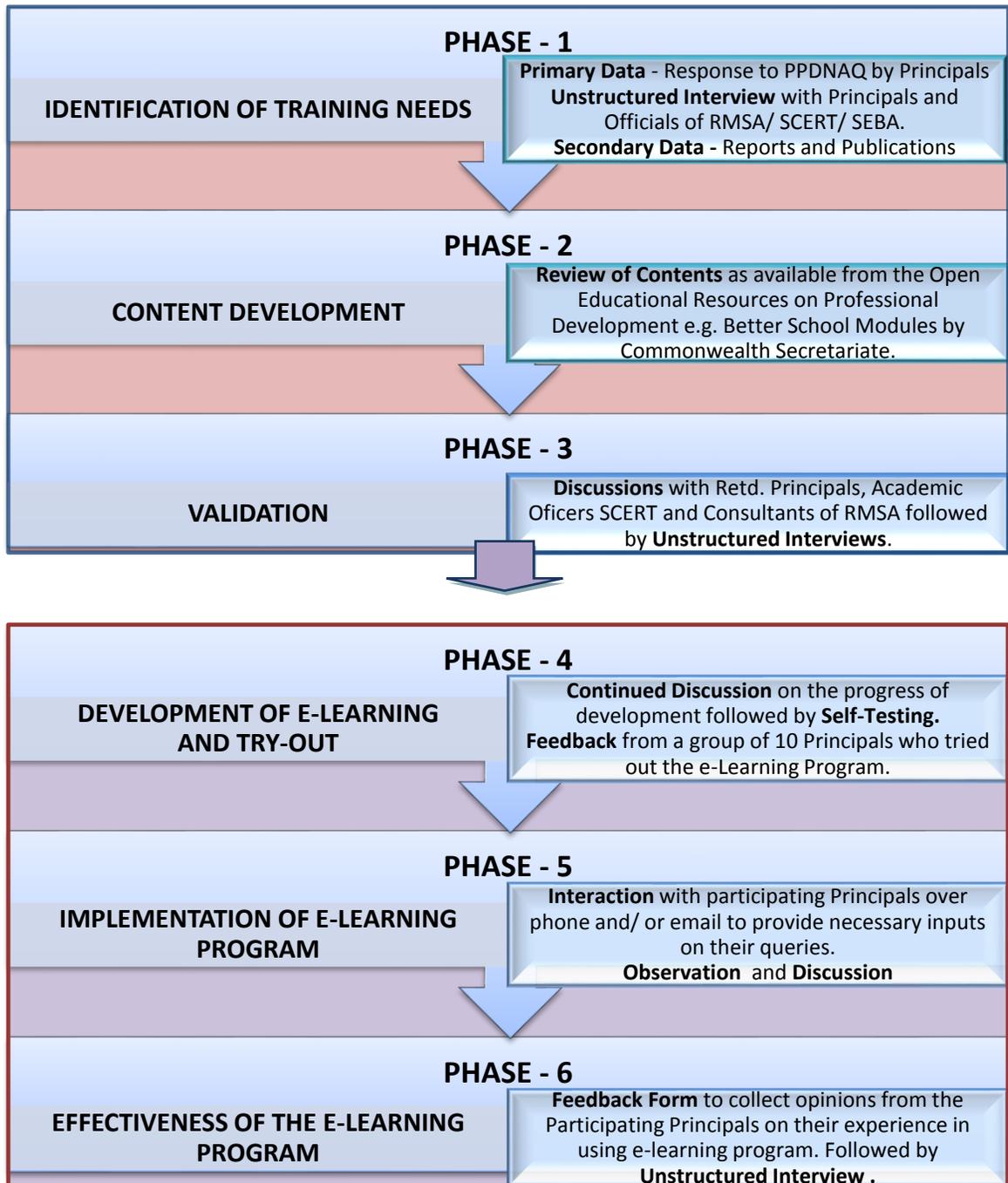
clearly understand and extract the minutest information that seemed to be helpful in evaluating the effectiveness of the e-Learning program.

### **3.9.3 Feedback Form**

In order to study the effectiveness of e-Learning programme from the participating School Principals the researcher developed a Feedback Form to collect the opinion and their experience with the e-Learning program. The feedback form sought to explore into certain indicators of e-Learning - Learner education background, Computing skills, type of Learner, their learning style, obstacles they faced during e-Learning, e-content in terms of relevance, user-friendliness, time and pace of learning, fulfillment of purpose etc, Instructional design, collaboration, motivation, attitude and interest, performance (self efficacy) and overall learning experiences. The feedback form was administered first during the try-out and this helped the researcher to arrive at its final shape by incorporating the relevant observations. A copy of the Feedback Form is attached in Appendix III. The researcher also observed the participating principals and conducted informal interviews to ascertain their response towards using the e-Learning program as mentioned earlier.

### **3.10 Procedure of Data Collection**

The study was carried out in different phases and the researcher used multistage sampling method to decide upon the sample for the study. Further different tools and techniques were adopted in different phases as mentioned earlier. Figure-5 shows the different phases of this study followed by a detailed description of the data collection procedure that the researcher followed in order to procure data from various sources.



**Figure-7: Data Collection Procedure Adopted during different Phases of the Study**

The study involved different phases as illustrated in Figure-7. A detailed description of data collection procedure adopted by the researcher during different phases of this study is provided in the following paragraph:

**Phase 1: Identification of Training Needs of School Principals:** The researcher collected valuable information by reviewing previous studies on training needs identification, task responsibility of the school principals and professional competencies of school principals. Also reports and publications of RMSA were studied in order to develop a meaningful insight for this study. These constituted the secondary data for the study.

The primary data was collected in the form of the responses given by the sample of 100 school principals (as described earlier) to the PPDNAQ which was administered to them. The researcher took sufficient time to make the school principals understand each and every item of the PPDNAQ by visiting each sample at their work place and discussing the same. In due course, the researcher also engaged in unstructured interviews to explore further into area of responsibilities of the school principals.

**Phase 2: Development of Content for the e-Learning Program:** The data/ information gathered during this phase of the study were mainly secondary in nature and involved extensive reviews of similar learning modules developed earlier by various institutions and those available as open educational resources online.

The content development was based upon the findings of the survey undertaken by the researcher during the first phase of the study and subsequent discussions with experts constituted of retired principals and academic officers of SCERT/ SEBA and RMSA. Continuous discussions especially with retired principals helped the researcher to exemplify their experiences in the form of examples and activities that were provided in the e-Learning program.

**Phase 3: Validation of the Content for e-Learning Program:** The process of validation included the distribution of the content so developed in the print form among experts including retired principals, Academic officers of SCERT, SEBA and Consultants of RMSA. The experts were asked to note their comments and the researcher engaged with continuous discussions from time to time during this phase of the study, in order to incorporate suggested corrections.

**Phase 4: Development of the e-Learning Program:** Once necessary corrections and suggestions were incorporated and the content was made ready, the researcher engaged with the software developer through constant discussions which revolved around the following aspects:

- a. Design layout of the e-Learning program
- b. Arrangement of content “module-wise” and its navigation
- c. Providing external as well as internal links to various open educational resources
- d. Continued testing and developing (Iteration)
- e. Self-testing by the researcher and providing necessary inputs for changes, if any

The e-Learning program so developed, was then tried out on a group of 10 school principals for a period of 45 days, during which the researcher closely observed the participants and also engaged in discussions. A feedback form was developed by the researcher to study the effectiveness of the e-Learning program. And by administering the feedback form to collect the opinions from the participating principals during the try out period, the researcher got valuable inputs to modify and further develop the feedback form to be used finally for evaluating the effectiveness of the e-Learning program.

The researcher also derived understanding about the experiences of the participants by conducting unstructured interviews as and when felt necessary in order to extract the minutest information about their experiences of using the e-Learning program.

**Phase 5: Implementation of the e-Learning Program:** During the implementation of the e-Learning program, the researcher tried to continuously interact with the participating principals whenever they required help and support. Often such discussions were held over the phone or emails. However, if felt necessary the researcher visited the participants to sort out their difficulties and in due process secure valuable information about the same.

**Phase 6: Evaluating the Effectiveness of the e-Learning Program:** Feedback Form developed by the researcher was distributed among the participating principals in order to extract information about their experiences in using the e-Learning program. Their opinions were solicited in terms of the relevance, clarity, user-friendliness, self-pace, self-motivation, impact on professional learning and challenges faced. The researcher also derived meaningful information by engaging with the participating principals in discussions and by conducting unstructured interviews in order to explore further into the minutest details as and when felt necessary.

### **3.11 Data Analysis for the Present Study**

The nature of data obtained in this study is quantitative and qualitative by nature. The quantitative data so obtained from the 1<sup>st</sup> phase of the study using the PPDNAQ was analyzed in terms of Mean, Standard Deviation and Standard Error of Mean. Test statistics, the t test was performed to establish the significance of the response at a level of significance of 0.95.

The qualitative data obtained from Unstructured Interviews, Discussions, Observation were analyzed descriptively by anchoring the responses/ content in terms of indexes. Opinions of the participants during the evaluation of the effectiveness of e-Learning program were collected with the help of a Feedback Form and the same was analyzed descriptively.

The detailed description of the data analysis and its interpretation is provided in the next chapter.