CHAPTER 4
THE RESEARCH METHODOLOGY

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CHAPTER 4
THE RESEARCH METHODOLOGY

4.1 Introduction:-

Various kinds of methods are popular for education. Generally in the study of research, direct information or data can be collected by living people with the help of research tools like questionnaire, interview, observation, scale etc. in this kind of situation. Survey method, developmental cause and effect research methods are used.

Sometimes data from documents or literature instead of living people are to be collected as the nature of the research problem. And in this kind of situation, the data that the researcher wants to use directly are not available. First of all the researcher has to collect the data by analyzing and then to interpret rate them qualitatively. So in this kind of research content analysis method has special importance. A good research design is a heart of the whole research work. For the research design Datra (1998) notes that in the writing of research report, the researcher did for solving the research problem in simple and clear language. The process of the research done by the researcher should be presented clearly, so that new researcher can get entire guideline by reading it if the new researcher wants to conduct a research on alike research problem.

The researchers choose the structure of the research design according to the nature of content by selecting the appropriate research method based on the objectives of the research problem. As a result, the objectives of the research problem are achieved through the achievement of the research design.
John Best (1985) notes that “Educational research involves a more systematic structure of investigation, usually resulting in some sort of formal record of procedures and a report of results or conclusion.”, which means a more systematic structure of the research work is necessary in the educational research, which is necessary in special kind of process and resulting in report. Through content analysis method is used in each research. In all kind of the research, the researcher has to take the help of content analysis method in selecting the research problem, in reviewing the past studies and in understanding the educational literature.

4.2 Origin of the Research Problem

Innovation of various curriculums at the university level is being happened in the world. Especially different thinking has got place in the curriculum of the teacher education. Units like contribution of literature written by special person, contribution in relation to social change and social institutions etc. have included in the curriculum. According to this a study of thinking of Dr. A P J Abdul Kalam will contribute for study as informal education.

Fundamentally, there are two forms of education: 1) Formal education and 2) Informal education. In the present time, there are efforts to accelerate the educational process through these two kinds of forms of education. Informal education has proved very useful as it has been socially famous. In spite of being a scientist by profession, Dr. A P J Abdul Kalam tried a lot to develop own different thinking by tremendous efforts in the field of education. His contribution to present the thinking in relation to youth, agriculture, technology, educational leadership, proficiency, responsibility patriotism, spiritual education, development
etc and their thinking on education is very notable. The thinking of Dr. A P J Abdul Kalam shows that the contribution of institutions and extraordinary people is very valuable for informal education. As a researcher, the work of research is to study the philosophy of new experiments. Here the researcher thought a lot about many subjects, topics and references for the Ph.D. work. The researcher analyzed many components of quantitative and qualitative education and noted that many researches have been conducting in the quantitative research, but there is least work conducted in the qualitative research compared to quantitative research. And the research has been a student of literature and qualitative research has been an interesting field for the researcher. So the researcher chose this research problem as the research topic for doctorate of philosophy degree. To know the new approaches of qualitative research and to be familiar with the research work are also the reasons to choose this research problem.

4.3 Research Area and Population:-

Research means scientific, systematic, expertise, gradual and well planned try out of the problem. There are many areas in the education for the research study. Here the researcher chose the philosophy of thinking on education of Dr. A P J Abdul Kalam as the research area. Philosophy teaches the man how to search the truth continuously, in which the work of understanding the questions related to human life of all the three tenses, is included. Philosophy solves the problems of the human relations. Philosophers, social reformer and thinkers all are very active in their try out to search something definite substance in their own area. Thinking corpuscle regarding education can be gained from their
thinking. Research in the area of educational philosophy gives training to such a work.

The population is the group consisting of all people to whom we (as researchers) wish to apply our findings. Population is very important aspect in the study of any research. The present study is of the study of philosophical and educational thinking of Dr. A P J Abdul Kalam, so the researcher included books edited, published and written by Dr. A P J Abdul Kalam, articles, speeches and lectures delivered by which the researcher can get the broad thinking of Dr. A P J Abdul Kalam.

4.4 Sample of the study

The population of the present study consists of books written by Dr. A P J Abdul Kalam and written on Dr. A P J Abdul Kalam and also the literature published by Dr. A P J Abdul Kalam. In the present study, the researcher took the help of the books written and or published by Dr. A P J Abdul Kalam. Here the researcher had taken the selected books written and or published by Dr. A P J Abdul Kalam, research papers, articles, speeches, and lectures delivered by Dr. A P J Abdul Kalam as sample of the study.

4.5 Research Process in relation to Educational Philosophy

Many research methods are used in the field of educational research. Research methods are very necessary for making the research effective and to conduct the research work in the appropriate direction. The researcher has to use the proper research method in relation to the research problem. If the researcher selects the proper research method, then and only the work of the research is fruitful. The interaction between education and philosophy can be very productive only when the direction
of the research process is in appropriate way and speed. The research methods are of three kinds. The following classification of the research methods is not entirely perfect, but the most of the experts accept this classification.

1. Historical Research Method,
2. Descriptive Research Method and

As the sub-classification of the descriptive research method, there are four kinds of the research methods: i) Survey research method, ii) content Analysis research Method, iii) Co-relational research method and iv) Developmental research method. Above all these, historical research method, library method, interview method are also slightly used. For the study of educational thinking of Dr. A P J Abdul Kalam, content Analysis research method is used in the present study.

The researcher uses the content analysis method for collecting and interpreting the special details by selecting the written or oral data. By this kind of research method, the researcher analyses the documentary literature like volumes, books, newspapers etc. and the written or oral literature too. Out of the available data, the collected and / or selected data are interpreted according to the objectives of the study, but there are no statistical techniques for the analysis.

When the researcher conducts the research work by this kind of research method, it is very necessary for the researcher to read the content for the data collection according to the objectives of the study, and then it is classified. Here, no any kind of statistical technique is used in both the process–analysis and synthesis, but logical and qualitative interpretations
are collected. And for this reason, this kind of research is known as the qualitative research.

In the present time, all the aspects of the education are affected because of the development of the modern technology. Education and educational philosophy need changes in relation to necessities of the present time. So the change in research methods is also possible and natural and moreover also welcomed.

When the researcher conducts the study of educational philosophy as depicted in the literature written and or published by Dr. A P J Abdul Kalam for the research work, it is very necessary to know thoroughly about the research method/s as used for the present research study. A model of steps of the content analysis research method is as below based on study of available research steps as well as the understanding of the steps of the research process.

1) Selection of the research problem: objectives and defining the title.
2) Formation of Hypotheses.
3) Defining the units of analysis.
4) Specifying the categories of idea units.
5) Construction of unit cards.
6) Sampling.
7) Study of literary documents.
8) Collection of units.
9) Classification of units.
10) Interpretation and result.
11) Writing of research report.
In this kind of research method, steps of the research process are based on the nature and objectives of the research problem. So there can be variety in the steps of this research method for the different studies. In the present study, steps of this research method are not fully authentic and ultimate but only guidelines.

In the present study, two kinds of research method and process - main and sub-ordinary are used. The researcher also studied a lot about the research methods to know which kind of research method is very effective for the present study. Generally, it is impossible to complete the whole research work by a use of a single research method. Only syntheses of appropriate research methods and its conscious experiment lead to the success in the research work. Research method is decided on the base of the type of the research problem. The truth for the researcher is that the researcher is to select the research method according to his / her research problem, collect the best data, carefully analyze the data and present the report of new knowledge and understanding it by synthesis of the data logically.

4.6 The Role of the Researcher:-

In the present study, the role of the researcher was of the reader and a critic. The present study was of the qualitative research type, so the researcher has to analyze the content according to the objectives of the study and source of the content. In the present study, the researcher used books written by Dr. A P J Abdul Kalam, articles, lectured and speeches delivered by Dr. A P J Abdul Kalam as the primary source.

First of all, the researcher read the books one by one and during reading the books, the researcher tried to understand the broad meaning
of educational philosophy used in the thinking of the writer- Dr. A P J Abdul Kalam. The researcher used to collect the thinking of Dr. A P J Abdul Kalam in relation to education, social education, women education, motivation, guidance, and education for democracy, nationalism, education through mother tongue and spiritual education. After reading the primary source the available literature, the researcher tried to know the educational philosophy and opinions of various thinkers and educationists. Then the researcher collected parallel information in reference to books and articles of other philosophers and thinkers. Here the work of criticism needed the patience, sincerity and insight of the researcher. Because in some cases the researcher accepted the study materials as in their own form by knowing use of selected reference in qualitative research as well as the thought of other philosophers, writers and thinkers.

After reading the qualitative literature and collecting the references, the researcher approached the guide and discussed with the guide and discussed with the guide as needed for the research work. Here the research presents the suggestions of the guide as the output of the discussion with the guide which is as under:

1. To find out the idea units that represents the thinking clearly by reading more.

2. To classify these idea units according to the suggestions of experts of education and the guide.

3. There should be interpretation of the writings on the part of the researcher as the work done honesty.
4. To arrange various criteria appropriately concerned to the educational thinking by reading the books written and / or published by Dr. A P J Abdul Kalam, articles, speeches and lectures delivered by Dr. A P J Abdul Kalam.

At the end of the discussion with the guide, the researcher correlated and compared the collected data with the other references, and thinking as depicted in other books also. After the clarification of the guide and experts of the education, the thinking of Dr. A P J Abdul Kalam under the classification of agriculture, technology, women education, social education, spiritual education, motivation to youngsters, development, education for democracy, nationalism is optimistic, acroamatic and revolutionary in nature.

In this kind of research, it is very difficult work to find out the appropriate content as sown hidden in the concerned literature. By following this approach, the researcher tried to classify the idea units appropriately and tried to represent the whole thinking of Dr. A P J Abdul Kalam more relevantly. The researcher also quoted other references, thinking of other thinkers, philosophers and educationists as the suggestions of the guide and concerned experts of the education field.

4.7 Research Method for the Present Study:-

The researcher used the content analysis research method for the content analysis as depicted in the books and articles written and / or published by Dr. A P J Abdul Kalam and speeches and lectures delivered by Dr. A P J Abdul Kalam. Moreover, historical research method and library method were also used for the present study. Let’s refer the nature of the content analysis research method in detail.
4.8 The Nature of the Content Analysis Research Method:–

Content analysis research method is one of the research methods of descriptive research method. This method is used to decide some special characteristics of communication. Communication can be in the form of both written and oral. Documentary materials like books, newspapers, magazines etc and all other written or oral literature are used to analyze the content by content analysis research method.

In the present research method, there does not need statistical analysis of quantitative or statistical data, but the meaning is developed according to the objectives of the research problem out of the verbal data, so this method is qualitative in nature.

After studying the related literature deeply, with the clear understanding the weaved or hidden data from the literature are collected or searched and prepared in such a way that qualitative analysis can be simplified. This method is very much important in classifying and resulting the less synthetic qualitative data that can be understood very simply and interpret very appropriately. In this method, the researcher did not observe, measure or experiment directly in relation to present situation, but the researcher found inferences logically by analyzing the collected references qualitatively.

Analysis – synthesis qualitative approach is used in this kind of research method. First of all, the researcher has to analyze the available references to get the data according to the objectives of the study. Then the collected data are synthesized by analyzing and the interpretations are described. Both the processes – analysis and synthesis are not used through statistical techniques, but through the pure logical and qualitative
way, these both processes are used. So it is very appropriate to call this research method as “Analysis – Synthesis Qualitative Research Method.” This method is also known as documentary survey or documentary analysis method. There are many similarities between historical research method and the content analysis research method. In the historical research method, old documents are very important whereas the documents of the present time are used for analysis in the content analysis research method. As a result, the searching of references is not a difficult work in the content analysis research method. Moreover, the external and internal criticism of the references is also not necessary in this kind of method.

Some researchers do not find the formation of hypotheses appropriate in this kind of researches, they consider it is important to form questions instead of the hypotheses according to the objectives of the study. Content analysis research method is used to analyze the data objectively and in scientific way in the qualitative researches. This method is very important to conduct the researches of social sciences. The use of this method is not simple and easy. In the present method, social phenomena or matters are analyzed scientifically. D.R. Newman of Information Management Department, Queens University, Belfast notes that, “content analysis is a research method that uses a set of categorization procedures for mankind valid and replicable inferences from data (text or images) to their context. It combines qualitative and quantitative aspects.”
4.9 **History of Content Analysis Research Method.**

Max Weber, a famous sociologist of Germany, used the content analysis research method in the year 1910 for the newspaper study of political matter. Then Herold Lasvev used this method to study the newspapers of Second World War time in the decade of 1930 – 40. Abraham had added qualitative aspect in this method in the year 1943. In the Second World War, this method was also used in media and political matters as well as in other fields too. Special software was developed for this method in Howard in 1960 – 70, which had been a sign of this method. But too much time was wasted in analyzing the data by using the cards in mainframe computer. In the present time, because of the technological development, the use of this method is specially used in the fields like study of communication, literature, sociology, education, politics, psychology and philosophy too.

4.10 **Types and Steps of Content Analysis Research Method:**

Carley (1992) gave detailed information about the Content Analyses Research Method and suggested that there are two sub–methods of content analysis research method:

1) Conceptual Analysis Method and
2) Relational Analysis Method.

In the conceptual Analysis method, the concepts are analyzed and checked and this analysis is also called thematic analysis.

In the Relational Analysis Method, interrelations of concepts or understandings are analyzed. In this method interrelation of two or more concepts and / or understandings are checked. This kind of analysis is also known as semantic analysis.
Carley shows three sub-types of Relational Analysis Method.

1) **Affect Extraction**: It means to observe, understand and interpret the feeling of attitude as depicted in described, written, printed or oral content, which is very difficult thing. Change occurs in feelings and attitudes according to time and context. Content analysis is not fruitful until the psychological and sentimental level of writer or speaker is not understood appropriately. The output of feelings or attitudes becomes helpful in this matter.

2) **Proximal Analysis**: It means the analysis of proximity or closeness of time or space. By this kind of approach, definite and clear concepts as depicted in lecture or writings are analyzed. Here, the correlation of concepts is tried to know in detail by analyzing even the roots of the content too. Here the content is arranged for the analysis of thinking proximity by clustering, grouping and arranging the content.

3) **Cognitive Mapping**: It means to plan cognitively and Meta-cognitively. This approach is used to analyze the more available results by affect extraction and proximity analysis. Available abstract concepts or understandings are given the materialistic form through the above two approaches. Here the analysis is based on the deep meaning of strength of the world. In this way, meaning or concepts are analyzed above all the time periods. Conceptual or understandable and relational analysis method’s steps are as below.

**Steps of Conceptual Analysis**:

The steps of conceptual analysis are as below:
1) Decide the level of analysis.
2) Decide how many concepts to code for.
3) Decide whether to code for existence or frequency of a concept.
4) Decide on how you will distinguish among concepts.
5) Develop rules for coding your texts.
6) Decide what to do with for levent information.
7) Code the texts.
8) Analysis of results.

Steps of Relational Analysis.

The steps of relational analysis are as under.

1) Identify the question.
2) Choose a sample or samples for analysis.
3) Determine the type of analysis.
4) Reduce the text to categories and code for words or patterns.
5) Explore the relationship between concepts (strength, sign and direction).
   • Interrelation of two or more concepts and the level of concepts are checked, when its concepts and synthesis are simple and easy.
   • It is very necessary to maintain the depth of the original writing and it is also necessary to know the positivity or negativity presented in the understanding (concepts) too.
   • Sometimes the positive relation presents the negative words or concepts, whereas sometimes contradict to this also happens. So it is also necessary to know the direction and effects of the understandings (concepts) too.
6) Code the relationships
7) Perform statistical relationship
8) Map out the representation

The educationist – Carley tried to make the present content analysis research method as a tool objectively. So it can be said that the content analysis research method has a scientific base.

The educationist – D. R. Newman considers the following five steps especially important for the content analysis research method:

1) Coding,
2) Categorization,
3) Classifying,
4) Comparing and
5) Concluding.

4.11 Importance of the Content Analysis Research Method:

The importance of the Content Analysis Research Method is as under:

1) Interactions of oral and printed concepts and ideas are studied and checked.
2) The analysis of ideas in relation to the development of any field is possible.
3) The use of this method is possible in both kinds of researches – quantitative and qualitative.
4) Valuable historical cultural insight can be gained in relation to time by the analysis of thinking.
5) This method is very useful in studying the groups in many fields based on caste, age, culture, society, literature etc.
6) Peeping out into the complexity of ideas, thinking and language is possible.

7) The presented method is an aid to analyze the interrelations.

This method has proved as very useful research method for the researcher to study objectively and subjectively the thinking of Dr. A P J Abdul Kalam as depicted books written and / or published by him, articles, speeches, and lectures delivered by him. The oral and printed content is evaluated or studied in relation to education, culture and time.

The researcher kept in mind all the steps of content analysis research method to study the thinking of Dr. A P J Abdul Kalam. Moreover, the researcher also concerned the components as suggested by Hayman. According to Hayman, the main components of the content analysis research method are as under:

1) Defining the units of analysis.
2) Frequency of idea units.
3) Direction and intensity of idea units.
4) Contingency analysis.
5) Sampling.
6) Recording instrument.

1) **Defining the unit of analysis:** First of all, the nature of the unit of the analysis is determined. Besides this, it is also determined which kind of form – group of words, sentence or paragraph is appropriate for the analysis. Then the researcher checks the certain characteristics of the unit for analysis. Selected concept unit should be meaningful and also very necessary to represent the whole meaning. Keeping in mind all these matters, the researcher initiated
the study by determining the idea units. The idea units of educational thinking were determined from the literature like the books written and / or published by Dr. A P J Abdul Kalam, essays, discussions, newspapers, articles, historical documents, lectures, speeches etc.

2) **Frequency of idea units:** The researcher classified the idea units for counting the frequency of the idea units by selecting / choosing the sentences as the idea unit of the educational thinking. Then the researcher classified various kind of idea units of educational thinking of Dr. A P J Abdul Kalam into groups of idea.

3) **Direction and intensity of idea units:** Idea units of educational thinking were classified in various group of ideas. The reason behind this is to know the frequency of idea units of Dr. A P J Abdul Kalam about the definite subject. Moreover, the groups of ideas were classified for understanding and checking the whole content that became more motivational and honest.

4) **Contingency analysis:** After classifying the idea units of thinking, the researcher developed the insight for the solid interpretation by checking and evaluation thinking presented in the oral or printed literature of Dr. A P J Abdul Kalam.

5) **Sampling:**

   It is very necessary that idea units that the researcher chooses should represent the whole thinking of the content for the analysis, otherwise the findings of the study are not possible to develop very excitement in the initial level and unclear approach creates difficulties for the researcher. Choice of the idea units in the content analysis research
method is really very much complex. In the present study, the researcher preferred specially clarity and easiness in the choice of the idea units in the form of model. The work to check the whole thinking of Dr. A P J Abdul Kalam was very hard and difficult. According to the title of the present research problem, thinking and thinking concerned to the title are taken as the sample.

In the present study, the researcher selected 288 idea units out of 858 idea units from the selected books, articles, speeches and lectures delivered by Dr. A.P.J. Abdul Kalam by purposive sampling method that represents the thinking on education of Dr. A P J Abdul Kalam.

6) **Recording instrument (idea units)**: Post-card sized papers were used to collect the idea units of the thinking of Dr. A P J Abdul Kalam based on the content analysis research method. After preparing the cards of idea units, they were classified into different groups of ideas and calculated the number of the idea units under different categories. Then they were analyzed. Thus, these cards were classified and categorized under the determined group of ideas and units of the content as depicted and suggested in the title of the research problem.

4.12 **The Collection and Classification of the Data:**

First of all the researcher read the selected books written by A. P. J. Abdul Kalam, lectures delivered by A. P. J. Abdul Kalam and speeches given by A.P.J. Abdul Kalam and tried to understand the ideas, group of ideas, intensity and importance of the ideas. During the rereading the researcher wrote the idea units on the cards according to the suggestions of the guide. Each ideas unit was given a particular sign, so that idea
group could form properly. The researcher had chosen 288 cards out of 858 cards on the basis of intensity and importance of the ideas. These idea units include the ideas of A.P.J. Abdul Kalam on aims of education, Education system, Educational process, Value education, Education for national unity and national development, leadership, religion and spirituality, science and technology. The detail of the collected data is given below:

Table 4.1
Classification of the Data:

<table>
<thead>
<tr>
<th>No.</th>
<th>Idea Groups</th>
<th>No. of Idea Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Aims of Education</td>
<td>44</td>
</tr>
<tr>
<td>2.</td>
<td>Education System</td>
<td>114</td>
</tr>
<tr>
<td>3.</td>
<td>Educational Process</td>
<td>21</td>
</tr>
<tr>
<td>4.</td>
<td>Value Education</td>
<td>46</td>
</tr>
<tr>
<td>5.</td>
<td>Education for National Unity and National Development</td>
<td>20</td>
</tr>
<tr>
<td>6.</td>
<td>Leadership and Education</td>
<td>12</td>
</tr>
<tr>
<td>7.</td>
<td>Religion, Spirituality and Education</td>
<td>23</td>
</tr>
<tr>
<td>8.</td>
<td>Science and Technology</td>
<td>08</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>288</td>
</tr>
</tbody>
</table>

4.13 The Source of the Data:

The data were collected from the selected books written by Dr. A.P.J. Abdul Kalam and written on Dr. A P J Abdul Kalam, articles, speeches given by Dr. A.P.J. Abdul Kalam and lectures delivered by Dr. A.P.J. Abdul Kalam. The source was shown in an abbreviation form. The
data were taken from the selected 15 books written by and written on Dr. A.P.J. Abdul Kalam.

4.14 Analysis of the Data:

After studying the related literature deeply for the research, Analysis – Synthesis qualitative approach was used to analyze and interpret the qualitative data in the present study. The present study is qualitative in nature, so the objective analysis was used for content analysis of the available data.

According to the content analysis method, the researcher utilized the following steps in the analysis of the data.

i) **Thought Analysis:**

The different idea units represent the thinking of the philosopher and thinkers on different fields of the education. These thoughts are presented in the form of statements or sentences. In the thought analysis method, meaningfulness, usability, interrelation, contradictions and logic of the thinking of Dr. A P J Abdul Kalam as depicted in the idea units were analyzed. The thinking of Dr. A P J Abdul Kalam on education and on other subjects was studied inferentially and descriptively by the criteria of this thought.

ii) **Concept Analysis:**

To study the concepts as depicted in the thinking presented in books written and / or published by Dr. A P J Abdul Kalam and / or in other literature, the concepts were compared, analyzed and synthesized. Thus, by making notes, the efforts of Dr. A P J Abdul Kalam to present the concepts in the form of ideas are studied in the present study.
iii) **Linguistic Analysis :-**

The thinking of Dr. A P J Abdul Kalam on education as presented through the words and other medium of expression was evaluated by the approach of analysis. In this way, the thinking presented through definite word or expression is known and identified by the linguistic analysis. Here the unit of the analysis can be word, group of words, whole sentence, summary, article or the whole book also. Here the researcher also takes the care to make understand the meaning of the unit easily and to avert the objectivity in the analysis process.

**4.15 Interpretation and Presentation of the data :**

In the present study, for the interpretation of the data, selected 288 idea units were classified in the groups of ideas and arranged them logically. Idea units, content units and ideas were tabulated and given signs for the analysis. Through this, the frequency of the idea units was also determined. The presentation of the thinking of Dr. A P J Abdul Kalam is described in the following chapters. This interpretation, analysis, synthesis and presentation are done according to the content analysis research method as discussed here.

The thinking of Dr. A P J Abdul Kalam is evaluated with other thinkers or educationists only in relation to the needs. The important findings of the study are presented at the end of the study.

Educational research is the base of the whole building of the education. Ultimately, the objective of research in education is only the practical applicability in the education. Authenticity, effectiveness and usability of the research is maintain only when research tools and
research methods are used according to the research problem. This matter was kept in mind for the present study.

4.16 Authenticity in the Qualitative Research.

In the quantitative type of research the universal and traditional concept of reliability and authenticity is there but not in the qualitative type of research. The researchers in the past considered appropriate to use the concept of reliability and authenticity in the qualitative research too. New standards for reliability and authenticity are established by the writers of the research books for the qualitative researchers. (Guba and Lincoln, 1989). They compare reliability with internal authenticity, transferability with external authenticity, dependability with reliability and conformability with the objectivity.

(i) Credibility:

(1) To collect the research data from more than one strategy.
(2) To be the researcher till the truths and examples are repeated.
(3) To observe till the identification of the hidden problem.
(4) To re-summarize by others.
(5) To analyze the contradictory characters.
(6) To check the characters under the study of the research.
(7) To collect the data by triangulation approach.

In the present study, the research data are collected from literature written by Dr. A P J Abdul Kalam, books written on Dr. A P J Abdul Kalam, his articles published in the magazines, his various lectures, his conversation with the student were read by the researcher. Out of these data the hidden meaning was inferred by criticizing the data. These hidden meanings were analyzed based on the available data.
(ii) **Transferability**

(1) To find out the similarity between the studies that enables the research design fit with other researches.

(2) To describe the time, place, reference and culture carefully.

In the present study designs of various qualitative researches are kept in mind. Similarities among past research studies were found. A study of educational philosophy based on case study was found in the most of researches.

(iii) **Dependability**

Dependability is possible in the case study. The design of the study is possible to fit with other design too. Dependability can be described by discussing the limitations of re-implementation of the study.

The researcher conducted the present study in relation to related literature of the qualitative research and the research design.

(iv) **Conformability**

The imagination of the researcher should not have impact on data and findings. After determining the content and the source of the research, it should be provided to the guide and experts of the education. And if they consider the concept, data and findings justified, the conformability of the research is proved appropriate.

In the present study, to clarify the conformability of the research, the researcher got the justification about the thinking on education, social education, education for democracy, agriculture, technology, youth education, nationalism and spiritual education as depicted in the literature written by Dr. A P J Abdul Kalam.
(v) **Authenticity**

Catalytic authenticity concerned to change and fairness are checked to prove the authenticity of the research.

For the authenticity of the present study, the researcher presented the criticism based on philosophers, experts and reference books to clarify the each thought. Thus, the researcher also tried to follow this step to check authenticity of the qualitative research.

**4.17 Conclusions**

The present chapter is dealt with the methodology and procedure of the present study. The conclusions of the present chapter are as under:

1) The ultimate aim of the educational research is the practical utility.

2) The competent methodology of the educational research is followed very specially in the present study.

3) Hayman’s guideline to the content analysis research method was followed in the present study.

4) The procedure of data collection, analysis, presentation and interpretation is described very carefully in the present study.