**DEFINING THE RESEARCH PROBLEM**

* To define a problem correctly, a researcher must know:
  + what a problem is?
* State the components of a research problem as under:
  + an individual or a group which has some difficulty or the problem.
  + some objective(s) to be attained at.
    - If one wants nothing, one cannot have a problem.
  + Must be alternative means (or the courses of action) for obtaining the objective(s) one wishes to attain
    - There must be *at least two means* available to a researcher for
    - if he has no choice of means, he cannot have a problem.
  + There must remain some doubt in the mind of a researcher with regard to the selection of alternatives.
    - This means that research must answer the question concerning the relative efficiency of the possible alternatives.
  + There must be some environment(s) to which the difficulty pertains.
* SELECTING THE PROBLEM
  + The research problem undertaken for study must be carefully selected.
  + The task is a difficult one, although it may not appear to be so.
  + Subject which is **overdone** should not be normally chosen, for it will be a difficult task to throw any new light in such a case.
  + Controversial subject should not become the choice of an average researcher.
  + Too narrow or too vague (fuzzy) problems should be avoided.
  + The subject selected for research should be familiar and feasible so that the related research material or sources of research are within one’s reach.
  + The importance of the subject, the qualifications and the training of a researcher, the costs involved, the time factor
    - Whether he is well equipped in terms of his background to carry out the research?
    - Whether the study falls within the budget he can afford?
    - Whether the necessary cooperation can be obtained from those who must participate in research as subjects?
  + The selection of a problem must be preceded by a preliminary study. This may not be necessary when the problem requires the conduct of a research closely similar to one that has already been done.
    - But when the field of inquiry is relatively new and does not have available a set of well developed techniques, a brief feasibility study must always be undertaken.

**NECESSITY OF DEFINING THE PROBLEM**

* Quite often we hear that a problem clearly stated he is a problem half solved. This statement signifies the need for defining a research problem. The problem to be investigated must be defined clearly.
* A proper definition of research problem will enable the researcher to be on the track where as an ill defined problem may create hurdles.
* Many questions should come into the mind of research scholar such as what data is to be collected? What characteristics of data are relevant and need to be studied? What relations are to be explored? What techniques are to be used for this purpose? And so on.
* The researchers should get answers to all these questions then only the research problem can be defined properly.
* Defining a problem is a prerequisite for any theory and is a step of the highest importance. In fact formulation of a problem is often more essential than its solution.
* **TECHNIQUE IN DEFINING A PROBLEM**
  + statement of the problem in a general way;
  + understanding the nature of the problem;
  + surveying the available literature
  + developing the ideas through discussions; and
  + rephrasing the research problem into a working proposition.
* **(i) Statement of the problem in a general way:** 
  + the problem should be stated in a broad general way, keeping in view either some practical concern or some scientific or intellectual interest.
  + In case of social research, it is considered advisable to do some field observation, some sort of preliminary survey or what is often called *pilot survey*.
  + Then the researcher can himself state the problem or he can seek the guidance of the guide or the subject expert in accomplishing this task.
* **(ii) Understanding the nature of the problem:** 
  + Understand its origin and nature clearly
  + to discuss it with those who first raised it in order to find out how the problem originally came about and with what objectives in view
  + A discussion with those who have a good knowledge of the problem concerned or similar other problems.
  + The researcher should also keep in view the environment within which the problem is to be studied and understood.
* **(iii) Surveying the available literature:** 
  + All available literature concerning the problem must necessarily be surveyed and examined
    - It will be well-conversant with relevant theories in the field, reports and records
    - To find out what data and other materials -- “Knowing what data are available often serves to narrow the problem itself as well as the technique that might be used.”
    - If there are certain gaps in the theories, or whether the existing theories applicable to the problem under study are inconsistent with each other, or whether the findings of the different studies do not follow a pattern consistent with the theoretical expectations and so on.
    - for indicating the type of difficulties that may be encountered in the present study as also the possible analytical shortcomings.
* **(iv) Developing the ideas through discussions:** 
  + often produces useful information
  + Various new ideas can be developed
  + Discuss problem with colleagues and others who have enough experience in the same area or in working on similar problems --- known as an ***experience survey***.
  + People with rich experience are in a position to enlighten the researcher on different aspects of his proposed study and their advice and comments are usually invaluable to the researcher --- sharpen his focus of attention on specific aspects within the field.
* **(v) Rephrasing the research problem:** 
  + to rephrase the research problem into a working proposition
  + rephrasing the problem into analytical or operational terms is not a difficult task
  + Through rephrasing, the researcher puts the research problem in as specific terms as possible so that it may become operationally viable and may help in the development of working hypotheses
* The following points must also be observed while defining a research problem:
  + (a) Technical terms and words or phrases, with special meanings used in the statement of the problem, should be clearly defined
  + (b) Basic assumptions or postulates (if any) relating to the research problem should be clearly stated
* Defining a research problem:
  + (c) A straight forward statement of the value of the investigation (i.e., the criteria for the selection of the problem)
  + (d) The suitability of the time-period and the sources of data available
  + (e) The scope of the investigation or the limits within which the research
* An example :
* Let us suppose that a research problem in a broad general way is as follows:
  + “Why is productivity in Japan so much higher than in India”?
  + It has a number of ambiguities such as
    - What sort of productivity is being referred to?
    - With what industries the same is related?
    - With what period of time the productivity is being talked about?
    - In view of all such ambiguities the given statement or the question is much too general to be amenable to analysis.
  + Rethinking and discussions about the problem may result in narrowing down the question to:
* Example
  + “What factors were responsible for the higher labour productivity of Japan’s manufacturing industries during the decade 1971 to 1980 relative to India’s manufacturing industries?”
* Further rethinking and rephrasing might place the problem on a still better operational basis as shown below:
  + “To what extent did labour productivity in 1971 to 1980 in Japan exceed that of India in respect of 15 selected manufacturing industries?
  + What factors were responsible for the productivity differentials between the two countries by industries?”
* Example:
  + With this sort of formulation, the various terms involved such as ‘labour productivity’, ‘productivity differentials’, etc. must be explained clearly.
  + The researcher must also see that the necessary data are available.
  + In case the data for one or more industries selected are not available for the concerning time-period, then the said industry or industries will have to be substituted by other industry or industries.
  + The suitability of the time-period must also be examined. Thus, all relevant factors must be considered by a researcher before finally defining a research problem
* http://www.experiment-resources.com/defining-a-research-problem.html
  + Look at any scientific paper, and you will see the research problem, written almost like a statement of intent.
  + Defining a research problem is crucial in defining the quality of the answers, and determines the exact research method used.
  + A quantitative experimental design uses deductive reasoning to arrive at a testable hypothesis.
  + Qualitative research designs use inductive reasoning to propose a research statement.
* CHECKLIST FOR TESTING THE FEASIBILITY OF THE RESEARCH PROBLEM

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | **YES** | **NO** |
| **1** | **Is the problem of current interest?  Will the research results have social, educational or scientific value?** |  |  |
| **2** | **Will it be possible to apply the results in practice?** |  |  |
| **3** | **Does the research contribute to the science of education?** |  |  |
| **4** | **Will the research opt new problems and lead to further research?** |  |  |
| **5** | **Is the research problem important?  Will you be proud of the result?** |  |  |
| **6** | **Is there enough scope left within the area of reseach (field of research)?** |  |  |
| **7** | **Can you find an answer to the problem through research?   Will you be able to handle the research problem?** |  |  |
| **8** | **Will it be pratically possible to undertake the research?** |  |  |
| **9** | **Will it be possible for another researcher to repeat the research?** |  |  |
| **10** | **Is the research free of any ethical problems and limitations?** |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **11** | **Will it have any value?** |  |  |
| **12** | **Do you have the necessary knowledge and skills to do the research?  Are you qualified to undertake the research?** |  |  |
| **13** | **Is the problem important to you and are you motivated to undertake the research?** |  |  |
| **14** | **Is the research viable in your situation?  Do you have enough time and energy to complete the project?** |  |  |
| **15** | **Do you have the necessary funds for the research?** |  |  |
| **16** | **Will you be able to complete the project within the time available?** |  |  |
| **17** | **Do you have access to the administrative, statistic and computer facilities the research necessitates?** |  |  |
|  | **TOTAL:** |  |  |

* Example
  + An anthropologist might find references to a relatively unknown tribe in Papua New Guinea.
  + Through inductive reasoning, she arrives at the research problem and asks, ‘How do these people live and how does their culture relate to nearby tribes?’
  + She has found a gap in knowledge, and she seeks to fill it, using a qualitative case study, without a hypothesis