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Research Problem: Identification and Formulation

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Abstract

Research is an investigation or experimentation that is aimed at a discovery and interpretation of facts, revision of theories or laws or practical application of the new or revised theories or laws. Identification of research problem leads in conducting a research. To initiate a research, the necessity for the research, to be carried out should be generated.The ideas and topics are developed while consulting literatures, discussions with experts and continuation of activities related to the subject matter. These ideas/topics generally called research problems and are statements about areas of concern, a condition to be improved, a difficulty to be eliminated, or a troubling question that exists in scholarly literature, in theory, or in practice that points to the need for meaningful understanding and deliberate investigation. A research problem does not state how to do something, offer a vague or broad proposition, or present a value question. The problem must be significant researchable lead to further research and suitable for the researcher. Formulation of the problem should lead to empirical investigation. Formulation of research problem should depict what is to be determined and scope of the study.It also involves key concept definitions questions to be asked. The objective of the present paper highlights the above stated issues.

Keywords: Research, Problem, Propositions, scope.

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Introduction

Research comprises creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications. Research problems are questions that indicate gaps in the scope or the certainty of our knowledge. They point either to problematic phenomena, observed events that are puzzling in terms of our currently accepted ideas, or to problematic theories, current ideas that are challenged by new hypotheses.

What is a research problem?

- It is the topic we would like to address, investigate, or study, whether descriptively or experimentally.
- It is the focus or reason for engaging in our research.
- It is typically a topic, phenomenon, or challenge that we are interested in and with which we are at least somewhat familiar applications

Problem Formulation

Problem formulation is the logical first step toward this goal.

As Northrop (1966) writes, "Inquiry starts only when something is unsatisfactory, when traditional beliefs are inadequate or in question, when the facts necessary, to resolve one's uncertainties are not known, when the most likely relevant hypotheses are not even imagined. What one has at the beginning of the inquiry is merely the problem" (p. 17).

The formulation of research problems also has an important social function. As Merton, Broom, and Cottrell (1959) suggest, researchers must justify the demands for attention and other scarce resources that research makes: "In conferring upon the scientist the right to claim that a question deserves the concerted attention of others as well as himself, the social institution of science exacts the obligation that he justify the claim" (p. xix).

Achieving significant research results is perhaps the most powerful justification for such claims, but this type of justification can be offered only after the fact, and only in the event that the research is successful. A compelling research problem, by contrast, **must marshal support in advance of research** and, if it **is sufficiently compelling**, can even sustain that support through the sometimes fruitless periods that researcher's experience. However, despite research problems' logical priority in inquiry, and their importance as a priori justification, a problem formulation, as John Dewey stresses, is in fact a "progressive" matter.

The Role of Theory in Problem Formulation

Theory plays a dual role in research.

1. On the one hand, new theories solve research problems by

accounting for unexplained phenomena and by superseding questionable older theories.

2. On the other hand, existing theory guides researchers in formulating research problems. In determining whether and in what respects a phenomenon or a theory is problematic, researchers consider the context of accumulated theoretical as well as empirical knowledge.

Sources of Research Problem

- Classroom
- School
- Community
- Own teaching experiences
- Classroom lectures
- Class discussions
- Seminars/workshops/paper presentations
- Internet
- Out-of-class exchange of ideas with fellow students and professors
- Reading assignment
- Textbook
- Special programme
- Research reports
- Term papers
- Consultation with
- Course instructor
- Advisor
- Faculty member

How is a research problem formed?

We often think we understand problems when we don't. For example, when students encounter difficulties with word problems in math, teachers may initially think that students have not mastered the basic skills that would allow them to carry out the needed computations. However, the difficulty may actually lie in poor reading skills, which prevent the students from identifying the words in math problems.

As another example, when students do not hand in homework assignments or participate in class, some might be inclined to think that the students are not motivated. While there may be motivational issues, motivation may not be the only factor. A high school student may have an evening job that demands considerable time and energy. A younger student may be trying desperately to camouflage poor or nonexistent skills. In some cases, the chosen instructional strategy may not be well matched to the student's cognitive or attention level. Therefore, it is crucial that researchers accurately identify the problem they want to study

Formulating the Problem

The selection of one appropriate researchable problem out of the identified problems requires evaluation of those alternatives against certain criteria, which may be grouped into:

Internal Criteria

Internal Criteria consists of:

1. **Researcher's interest:** The problem should interest the researcher and be a challenge to him. Without interest and curiosity, he may not develop sustained

perseverance Interest in a problem depends upon the researcher's educational background, experience, outlook and sensitivity.

2. **Researcher's own resource:** In the case of a research to be done by a researcher on his own, consideration of his own financial resource is pertinent. If it is beyond his means, he will not be able to complete the work, unless he gets some external financial support. Time resource is more important than finance. Research is a time-consuming process; hence it should be properly utilized.
3. **Researcher's competence:** A mere interest in a problem will not do. The researcher must be competent to plan and carry out a study of the problem. He must possess adequate knowledge of the subject-matter, relevant methodology and statistical procedures.

External Criteria

1. **Research-ability of the problem:** The problem should be researchable, i.e., amendable for finding answers to the questions involved in it through the scientific method.
2. **Novelty of the problem:** The problem must have novelty. There is no use of wasting one's time and energy on a problem already studied thoroughly by others.
3. **Importance and urgency:** Problems requiring investigation are unlimited, but available research efforts are very much limited.
4. **Facilities:** Research requires certain facilities such, as well-equipped library facility, suitable and competent guidance, data analysis facility, etc. Hence the availability of the facilities relevant to the problem must be considered. Problems for research, their relative importance and significance should be considered.
5. **Feasibility:** A problem may be a new one and also important, but if research on it is not feasible, it cannot be selected.
6. **Usefulness and social relevance:** Above all, the study of the problem should make a significant contribution to the concerned body of knowledge or to the solution of some significant practical problem. It should be socially relevant.
7. **Research personnel:** Research undertaken by professors and by research organizations require the services of investigators and research officers. But in India and other developing countries, research has not yet become a prospective profession. Hence talent persons are not attracted to research projects.

Each identified problem must be evaluated in terms of the above internal and external criteria and the most appropriate, one may be selected by a research scholar.

Guidelines for selecting problem

1. The problem should be such in which researcher may be deeply interested
2. The problem should be related to the chain of thinking because the stray problem can mislead the whole research project
3. The problem selected should not necessarily be a new one. It may be old problem or one on which work has already been done
4. The problem should be within meaningful limits i.e. it should not be too comprehensive

Considerations in Selecting a Research Problem

These help to ensure that your study will remain manageable and that you will remain motivated.

1. **Interest**: a research endeavour is usually time consuming, and involves hard work and possibly unforeseen problems. One should select topic of great interest to sustain the required motivation.

2. **Magnitude:** It is extremely important to select a topic that you can manage within the time and resources at your disposal. Narrow the topic down to something manageable, specific and clear.

3. **Level of expertise**: Make sure that you have an adequate level of expertise for the task you are proposing since you need to do the work yourself.

4. **Relevance**: Ensure that your study adds to the existing body of knowledge, bridges current gaps and is useful in policy formulation. This will help you to sustain interest in the study.

5. **Availability of data**: Before finalizing the topic, make sure that data are available.

6. **Ethical issues**: How ethical issues can affect the study and how ethical problems can be overcome should be thoroughly examined at the problem formulating stage.

Principle Components in the Formulation of a Problem

- The originating questions (what one wants to know?)
- The rational- theoretical or practical (why one wants to have the questions answered?)
- The specifying questions (possible answers to the originating) questions in term of that satisfy the rationale.)

The Originating Questions

- Represent the beginning of certain difficulties or challenges
- Are formulated in such specific indicate where exactly the answers to them can be searched for.
- Constitute the initial phase in the process of problem formulation.
- May be formulated in terms of broader delimited categories of social variable but do not indicate specifically which particular variables in each class might be germane to the issues.
- Usually derive from a general theoretical orientation rather than a definite theory.

Rationale of Questions

- Is the statement of reasons why a particular question is worth putting across.
- States what will happen to other parts of knowledge or practice if

the question posed is answered, i.e., how the answer to the question will contribute to theory and/ or practice.
- Helps to effect discrimination between scientifically good and scientifically trivial questions.

Specifying Questions

- Culminate the process of formulating a research problem
- Involve the breaking down of originating question in with several specifying questions related to particular aspects and their consequences.

Necessary Conditions for Formulating a Research Problem

We may now list some of the conditions that experience has proved to be conducive to formulation of significant research problems.

- Systematic Immersion in the Subject matter through first hand observation
- Study of Relevant Literature on the Subject.
- Discussions with persons having rich practical experience in the field of study.

Sources of Research Problem

The research problem may be selected from the following sources:

- Theory of one's own interest
- Daily problems
- Technological changes
- Unexplored areas
- Discussions with other people

Criteria of a Good Research Problem

The following are detailed list of criteria for the choice of research problem.

Novelty-It should be sufficiently original so that it does not involve objectionable duplication.

Interesting-The problem should be interesting for the investigator himself.

Importance-If it is not worth-while, if adds to neither knowledge nor lead to any improvements in the current practices.

Immediate Application-The investigator should ask himself the question, will my research help in solving an urgent problem

Feasibility or Amenability-Feasibility issue of research includes the following

- Availability of data
- Availability of cooperation
- Availability of guidance
- Availability of other facilitates
- Experience and creativity
- Coverage and confidence

Common Errors in Formulating Research Problem-Naming a Broad Filed

To choose the broad area of study instead of specific problem makes no justification.

Narrowing or Localizing a Topic

The problem should not be narrowed to such an extent that it becomes too small and insignificant from research point or view.

Conclusion

In concluding lines I want to say that research is a creative work and this paper gives the researcher an outline about the identification and formulation of research problems. Best selected problems serve its purpose and prove the solution to many identified and unidentified problems.

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