CHAPTER 2: IDENTIFYING RESEARCH PROBLEM

(Adapted from Ary, Jacobs and Sorensen, 2010, pp. 44 – 58)

The first question and perhaps one of the most difficult aspects of any research undertaking is the identification of appropriate research questions. It is the first step in the scientific method as the recognition of a felt difficulty, an obstacle, or problem that puzzles the researcher. The first step in the research process is therefore to select a problem for investigation. Selecting and formulating a problem is one of the most important aspects of doing research in any field.

In order to ask questions that research can answer, one should have knowledge or experience in an area.

Furthermore, the question chosen for investigation should hold deep interest or be one about which the researcher is really curious. The choice must necessarily be very personal or else the researcher may find it difficult to muster the motivation to carry the research through to its end. Find a question that intrigues you and you will enjoy the search for a solution.

After having chosen the general area of investigation, the researcher then narrows it down to a specific statement of the research question.

2.1. SOURCES OF PROBLEMS

The first question most students ask is “How do I find a research problem?” Although there are no set rules for locating a problem, certain suggestions can help. Three important sources for research problems are experience, deductions from theory, and related literature. Noneducation sources may also be useful.

(1) EXPERIENCE

Among the most fruitful sources for beginning researchers are their own experiences as educational practitioners. Teachers have intuitions or hunches about new relationships or why certain things in school happen the way they do. Teachers often question the effectiveness of certain classroom practices that have become routine but that may be based more on tradition or authority than on scientific research. They wonder if alternative procedures would be more effective.
Most graduate students in education have been in the classroom or are currently working full- or part-time in schools. Students who have not had teaching experience can get ideas from discussions and their reading in education courses. We recommend that you make a list of ideas, noting things that you question. By studying these notes, you will soon identify a worthwhile research problem.

(2) THEORIES

Theories are a good source of problems for research. A *theory* may be defined as a set of interrelated statements, principles, and propositions that specify the relationships among variables. The application of the general principles embodied in a theory to specific educational problems is only hypothetical, however, until research empirically confirms them. Social comparison theory suggests that students form academic self-concepts by comparing their self-perceived academic accomplishments to some standard or frame of reference. The frame of reference for most students would be the perceived academic abilities of their classmates.

Not all theories are equally useful to a beginning researcher. There are some of the characteristics one searches for in a good theory for a research study:

1. *An essential characteristic of a good theory is that it is testable.* The theory chosen should be one from which the researcher can make concise predictions (hypotheses) about what will happen in new situations and can verify these predictions through empirical observation. As the hypotheses are supported in research studies, they then become part of the theory that adds to the body of knowledge. However, if the theory cannot be tested, it serves no useful purpose.

2. *A good theory is not only testable but also falsifiable.* Being falsifiable means that it is capable of being proven wrong. It is possible to gather evidence that contradicts the theory. A theory that explains why a tornado touched down in a certain area of a town by stating that the people there are being punished for their sins is not a theory that can be proven wrong. Thus, it is not a useful theory.

3. *A good theory deals with some significant phenomenon or behavior that needs explanation, such as learning or motivation.*

4. *A good theory provides the simplest, clearest, and most plausible explanation for the
phenomenon. A good theory follows the principle of parsimony, which states that a theory should explain the largest number of facts with the smallest number of principles.

5  A good theory has internal consistency; its propositions do not contradict one another. For example, a “commonsense” theory of human separation may state “Absence makes the heart grow fonder” but also “Out of sight, out of mind.” One could find evidence to support both of these propositions; thus, the theory would not be useful for predicting what might happen when people are separated.

In summary, think of an educational, psychological, or sociological theory that you find especially interesting. Read a summary of the theory in journals, textbooks, or primary sources, and then ask a question. A theory-based research question is beneficial because the results can be tied to a body of existing knowledge. The research can verify or fail to verify the theory, and it will most likely suggest other questions for research. You might talk to your professors to find out what they are working on or to get their suggestions.

(3) RELATED LITERATURE

Another valuable source of problems is the published literature in your area of interest. In published research, you will find examples of research problems and the methods used to solve them. A review of related literature may help in the following ways:

You may find a study that needs to be replicated. You can repeat someone else’s study, not exactly, but with some variation. Replication is a worthwhile activity because it provides more evidence of the validity of the original findings. As studies are repeated at different times and in different places, with the findings supported in each study, we can have increasing confidence in the scientific validity of the findings.

You may find a question that represents the next logical step in the research on a problem. The outcomes of one piece of research very often lead to new questions. In the concluding sections of their research reports, researchers often describe new questions that have arisen and suggest additional studies that should be done. A productive way to extend studies is to introduce new variables into a research design for further control and for determining interaction effects
among variables. Many multivariate studies are extensions of earlier single variable investigations.

In conclusion, published research can be a great source of ideas for research. With some critical analysis of the research in your field and a bit of creativity, you should be able to find several potentially researchable problems. Reading research will also help you by showing how previous researchers measured variables, selected samples, analyzed data, and so on.

2.2. EVALUATING THE PROBLEM

After you have tentatively selected a question that interests you, you need to ask if it is a question that warrants an expenditure of time and effort to investigate. The following are criteria that one can use to evaluate a research problem:

1. The problem should have significance - that is, it should be one whose solution will make a contribution to educational theory or practice. The problem may fill in gaps in current knowledge or help resolve some of the inconsistencies in previous research. You should be able to answer the question “So what?” with respect to your proposed study. Would the solution make any difference to educational practice? Would other educators be interested in the findings? Would the findings be useful in an educational decision-making situation?

2. The problem should be one that will lead to new problems and so to further research. A good study, while arriving at an answer to one question, usually generates a number of other questions that need investigation. Avoid trivial problems that have little or no relationship to theory or previous research.

   We suggest that a beginning researcher consider selecting a problem that could possibly be expanded or followed up later in a master’s thesis or even a doctoral dissertation. It may be helpful if students familiarize themselves with the research efforts of their professors, who not only can suggest related problems needing investigation but also may later serve as a mentor or a doctoral committee member.

3. The problem must be researchable. Although this criterion would seem self-evident, in practice, many proposed problems are not researchable. A researchable problem is one that can be attacked empirically; that is, it is possible to gather data that answer
the question. Many interesting questions in education cannot be answered by scientific research. Philosophic questions, for example, that ask what should be done are not researchable and should be avoided.

4 *The problem should be suitable for the researcher.* The problem may be excellent from the standpoint of the previous criteria but inappropriate for the individual. First, the problem should be one in which you, the researcher, have a genuine interest and about which you can be enthusiastic. It should be a problem whose solution is personally important because of what it could contribute to your own knowledge or to improving your performance as an educational practitioner.

5 *The problem should be ethically appropriate.* That is, the problem should be one that you can investigate without violating ethical principles. Unlike researchers in the physical sciences, educational researchers are dealing with human subjects with feelings, sensitivities, and rights who must be treated ethically. There are three issues the researcher should consider:

   a *Consent.* Researchers need to obtain consent from the intended subjects. Subjects should be able to choose whether they wish to participate in the study or not. Obtain consent from subjects after taking steps to ensure that they have a complete understanding of the procedures to be used, any risks involved, and any demands that will be placed on them. Obtain parental consent if minor children are to be involved in the study.

   b *Protection from harm.* Do not plan research that may cause physical harm or psychological harm such as stress, discomfort, or embarrassment that could have lasting adverse effects. Fortunately, most educational research does not involve great risk of harm to subjects. However, the potential for harm always exists, and a researcher should be prepared if a participant requests counseling or other help after participating in the study.

   c *Privacy.* A researcher should invade the privacy of subjects as minimally as possible.

Table 2.1 summarizes the criteria of a good research problem.

**Table 2.1** Characteristics of a Good Research Problem (Adapted from Ary, 2010, p. 51)
The problem is significant (it will contribute to the body of knowledge in education).

The problem is one that will lead to further research.

The problem is researchable (it can be investigated through the collection of data).

The problem is suitable (it is interesting and suits the researcher’s skills, time, and available resources).

The problem is ethical (it will not cause harm to subjects).

**SUMMARY**

The first task facing researchers is selecting a researchable problem and stating it in a form suitable for research. To find a problem, investigators may look to their personal experiences, to theories from which questions may be deduced, to the current literature in their area of interest, or to noneducation sources. They must evaluate the significance of the proposed problem in terms of specific criteria, asking questions such as “Will the problem contribute to the present body of knowledge?” “Does it have potential for leading to further research?” “Is it testable - that is, can the variables be observed and measured?” “How appropriate is the problem with respect to my interests, experience, and knowledge in the area?” “Do I have access to the data required by the problem, and are instruments available, or could they be constructed, to measure the variables?” and “Can the data be analyzed and interpreted within the time available?” The question should not directly involve philosophical issues, nor should it be so general that a research undertaking is impossible. A quantitative research question asks about the relationship between certain variables. The statement of the question should identify the population of interest and the variables to be investigated. A qualitative research question indicates the general purpose of the study. The criteria for evaluating qualitative problems are similar to those used for quantitative research problems.

**DISCUSSION**

How do the following questions are on the criteria for evaluating research problems?

1 Learner autonomy in English learning: Perspectives from FLD students at Vinh university

2 Learning English with movies by 3rd year students MD at HB university
3 Project-Based Learning to develop 3\textsuperscript{th} year students’ speaking skills at FLD of HT university
4 Some Vietnamese traditional dishes
5 Should I translate the short story "The Gift of the Magi" by O. Henry into Vietnamese?
6 Concept LOVE OF LIFE IS A JOURNEY in the story "Love of life" by Jack London