

RESEARCH: A METHOD OF GETTING RELIABLE INFORMATION

Dr. Abdul Muth'im, M.Pd.
Lambung Mangkurat University Banjarmasin

Introduction

It is widely believed that one's life depends very much on the quantity as well as the quality of information he/she possess. The more and the better the information one has the better the quality of his/her life will be. On the contrary, the less information one has either in term of quantity and in term of its quality the worse the quality of his/her life will be. This is reasonable indeed. A well informed farmer, for instance, will surely produce better quality of crops than a farmer who does not have adequate information. By the information he/she owns, a well-informed farmer knows the characteristics of good seeds, the kinds of soil on which the seeds will be planted, the kinds of suitable fertilizer for the seeds and soil, the time to plant the seeds, the pests that may ruin the plants, the way to prevent the pests and so forth better than a less-informed farmer. Even, a well-informed farmer knows how to make good money from the crops he/she produces better than a less-informed farmer.

So is a well-informed teacher. A well-informed teacher is also believed to be able to teach better than a less-informed teacher. Based on the information he/she possessed, a well-informed teacher will be able to plan, to execute, and to evaluate his/her teaching better than a less-informed teacher. This is because a well-informed teacher is believed to be rich in teaching materials resources, in various methods and strategies of teaching, and has different ways of assessing his/her students' learning compared to the less-informed teacher. With the two illustrations it can be concluded that anyone who has more and better quality of information can do something better than someone who has less quantity and quality of information.

The question is, 'How can one get information'. In relation with this, Fraenkel & Wallen (2006) stated that information can be obtained in different ways covering: sensory experience, agreement with others, expert opinion, logic and scientific method. Among the five approaches of finding information the one that is considered to be the most reliable is scientific method.

It is true that information can be attained through sensory experience. By using his/her eyes one can figure out the shape and physical appearance of someone or something. By using his/her ears one can describe the loudness or softness of sound. By using his/her nose one will be able to smell the aroma of different flowers. By using his/her skin one can feel whether a surface is smooth or rough. And by using his/her tongue one will be able to taste whether the food served is hot, sweet or sour. Unfortunately, depending totally on sensory experience one may not obtain information that contains true value. This is because of the fact that the capability of eyes to see, the capability of ears to hear, the capability of nose to smell, the capability of skin to feel, and the capability of tongue to taste is limited. So, the information attained through the five senses may be misleading.

It is also true that information may also be obtained by asking agreement of others. According to this idea, a piece of information is said to have true value if other people also agree with it. Yet, it is also known that agreement does not always go hand in hand with the truth. It means that what is agreed by a majority of people does not necessarily have a true value. It is possible that an agreement is given not because of the truthfulness of the information, it is given because of there is other motive or motives behind the agreement. If this is what happens, the true value of information cannot and may not rely on the agreement of others.

It is also true that information can be obtained from expert opinion. An expert is someone who has a great deal of knowledge and skills in certain field. However, knowing a great deal in certain field does not mean that an expert knows a great deal in other fields too. What he/she knows is relatively limited to what he/she learns from reading and thinking, from listening to and observing others, and from their own experience. What experts know is still based primarily on what they have learned, argued Fraenkel & Wallen (2006:5). A dermatologist is, of course, has more information about skin diseases and everything concerning skin than a dentist because the information he/she learns from his/her reading, thinking, listening to, observing and experiencing about skin diseases is much more than the information a dentist learns. On the contrary, a dentist has more information about tooth-ace and everything about teeth than a dermatologist because the information he/she owns is much more than the information had by a dermatologist. So, though information given by an expert in one area is dependable it is not necessarily dependable in the other area(s) of expertise. The information can be misleading.

It is also true that information can be obtained by using logic. The process of logic is carried out through three steps: (1) stating major premise, (2) stating minor premise, and (3) conclusion. A piece of information may contain true value in logic if both the major premise and the minor premise have true value. For example, (1) All human beings are breathing, as *major premise*, (2) Samsul is a human being, as *minor premise*, and (3) Therefore, Samsul is breathing, as *conclusion*, can be said to have true value. However, if the *major premise* is (1) All animals have four legs, the *minor premise* is (2) Horse is an animal, and *the conclusion* is (3) A horse has four legs, cannot be said to have true value because the fact shows that not all animals have four legs; some of them have more than four legs, some of them have two legs, even, some of them have no legs at all. So, depending wholly on logic is not reliable either.

The fifth approach to get information in accordance with Fraenkel & Wallen (2006) is scientific method. The goal of scientific method, in accordance with Gay (1987:3), is “to explain, predict, and/or control phenomena. This goal is based on the assumption that all behaviors and events are orderly and that they effects which have discoverable causes”. In order that behaviors and events can be explained, predicted, and/or controlled one should conduct a research. Considering the characteristics of scientific method, it is assumed that only through research that reliable information, that is, the information that contains true value can be obtained.

What is research?

Research, in accordance with Booth, et al. (2003) is gathering information to answer a question that solves a problem. Kothari (2004) defines research as a scientific and systematic search for pertinent information on a specific topic. Kumar (2005) defines research as one of the ways to find answers to your question. In education, Gay (1987) defined research as the formal, systematic application of the scientific method to study educational problem. From the above definitions it can be understood that a research should be done formally, be systematically, be scientifically and answer a question.

One of the definitions of the word *formal* in accordance with *Cambridge Academic Content Dictionary* (2008) is “serious and correct”. So, research should be done seriously and correctly. Seriously means it needs complete attention. Correctly implies that it should be done in agreement with the true facts or in agreement with a generally accepted standard.

The second requirement of research is that it should be done systematically. This means that research should be conducted based on the commonly accepted ways or stages. The typical stages in research are: (1) selecting a problem, (2) analytical stage, (3) selecting research strategy and developing instrument, (4) collecting and interpreting data, and (5) reporting the results (Ary et al., 1979).

In selecting a problem, a researcher should select the one that is suitable with the researcher either in term of interest, expertise, time and fund. This is important because when a researcher selects a problem or is selected for him/her that is not interesting to him/her, that is not suitable with his/her expertise, that does not permit to accomplish the work because of the limitedness of time, and that cannot be afforded by the fund provided, the research is unlikely to be executed well.

In analytical stage, the researcher is supposed to review all the previous studies that may have been carried out by other researchers on the same field. By reviewing the previous research a researcher may learn that his/her study is similar with someone else’s research done in other area in different year. This is important to avoid unintentional replication, though replication in research is tolerable. By reviewing the previous studies may also know that his/her study is significantly different from the one done by other researcher(s) and he/she is supposed to be able to fill the gap left by them.

In the third stage, i.e. the stage of selecting research strategy and developing instrument, a researcher is supposed to select method of attacking the research problem whether to apply descriptive, experimental, causal-comparative, or correlation. Also, a researcher should develop instrument of collecting data. In collecting data he/she may use test, questionnaire, interview, observation, or other instruments.

In the fourth stage, that is, collecting and interpreting data, the researcher is supposed to determine how the data will be collected. Should the data be collected through testing? Should they be collected through questionnaire? Should the data be collected through interview? Should the data be collected through observation? Or, should the data be collected through other means of data collection? After the data have been collected, the next stage a researcher should do is to interpret the data. It is this interpretation of data that constitutes the answer of research question.

The last stage is reporting the results. This stage is optional. It means that there is no obligation for an individual-based purpose researcher to report the result(s) of his/her own study to other(s). However, if the research is done based on certain people or certain institute he/she has the obligation to report the result(s) of his/her research. The same obligation is also valid for students who are supposed to graduate from an educational institution, usually from tertiary education, such college or university. Without submitting the report of his/her research a student does not have the right to graduate from that educational institution.

Classification of research

Gay (1987) divided research into two classifications, they are: by purpose and by method. By purpose, research can be classified into: *Basic* versus *Applied Research*, *Evaluation Research*, *Research and Development*, and *Action Research*. Basic research is conducted solely for the purpose of theory development; applied research is conducted for the purpose of applying, or testing, theory and evaluating its usefulness in solving (educational) problems. Evaluation research is a systematic process of collecting and analyzing data in order to make decisions. Research and development is conducted with the purpose to develop products for use (in school). Action research is conducted for the purpose to solve classroom problems.

By method, in accordance with Gay (1987) research can be classified into: *Historical Research*, *Descriptive Research*, *Correlational Research*, and *Causal-Comparative* and *Experimental Research*. Historical research is a kind of research that studies, understands and explains past events. Descriptive research is a kind of research that collects data in order to test hypotheses or answer question(s) concerning the current status of the subject of the study. Correlational research is a kind research that attempts to determine whether, and to what degree, a relationship exists between two or more quantifiable variables. Causal-comparative and experimental research are in some aspects similar. Both attempt to establish cause-effect relationship and both involve group comparison. The major difference between them is that in experimental research the alleged “cause” is manipulated, and in causal-comparative research it is not.

Quantitative versus Qualitative research

Other classifications of research are: quantitative and qualitative research. Quantitative research, in accordance with Fraenkel & Wallen (2006), is usually based on the belief that facts can be separated, that the world is a single reality made up of facts that can be discovered. On the other hand, qualitative research is assumed that the world is made up of multiple realities, socially constructed by different individual views of the same situation. The general differences of quantitative and qualitative research can be seen on the following table.

Quantitative Methodologies

- Preference for precise hypotheses stated at the outset
- Preference for precise definitions stated at

Qualitative Methodologies

- Preference for hypotheses that emerge as study develops.
- Preference for definitions in context or as

the outset.

- Data reduced to numerical scores.
- Much attention to assessing and improving reliability of scores obtained from instruments.
- Assessment of validity through a variety of procedures with reliance on statistical indices.
- Preference for random techniques for obtaining meaningful samples.
- Preference for precisely describing procedures.
- Preference for design or statistical control of extraneous variables.
- Preference for specific design control for procedures bias.
- Preference for statistical summary of results.
- Preference for breaking down complex phenomena into specific parts for analysis.
- Willingness to manipulate aspects, situations, or conditions in studying complex phenomena.
- study progresses.
- Preference for narrative description.
- Preference for assuming that reliability of inferences is adequate.
- Assessment of validity through cross-checking sources of information (triangulation).
- Preference for expert informant (purposive) samples.
- Preference for narrative/literary descriptions of procedures.
- Preference for logical analysis in controlling or accounting for extraneous variables.
- Primary reliance on researcher to deal with procedural bias.
- Preference for narrative summary of results.
- Preference for holistic description of complex phenomena.
- Unwillingness to tamper with naturally occurring phenomena.

Conclusion

In this globalized era the role of information is felt more and more important to facilitate the life of human beings. It is understandable then that only those who master information that can win the struggle in life. Of course the information needed is the information that has true value. Research is believed to be the most reliable way of getting reliable information. This is because the characteristics possessed by a research enable to obtain reliable information. Asking question, collecting data, analyzing data, and drawing conclusion are the basic steps that a researcher should follow in order that he/she finds the answer of his/her question.

References

- Ary, D., Jacobs, L. C., & Razavieh, A. (1979). *Introduction to Research in Education*. Second Edition. Printed in United States: Holt, Rinehart and Winston.
- Booth, W. C., Colomb, G. G., & Williams, J. M. (2003). *The Craft of Research*. Second Edition. Chicago: The University of Chicago Press.
- Cambridge Academic Content Dictionary*. (2008). Cambridge: Cambridge University Press.
- Fraenkel J. R. & Wallen, N. E. (2006). *How to Design and Evaluate Research in Education*. Sixth Edition. Boston: McGraw Hill.
- Gay, L.R. (1987). *Educational Research Competencies for Analysis and Application*. Third Edition. Columbus, Ohio: Merrill Publishing Company.

- Kothari, C.R. (2004). *Research Methodology Methods & Techniques*. New Delhi: New Age International (P) Limited.
- Kumar, Ranjit. (2011). *Research Methodology: a Step-by-Step Guide for Beginners*. Third Edition. London: SAGE Publications Ltd.