UDC 378

THE NATURE OF EDUCATIONAL RESEARCH AND ITS QUALITATIVE AND QUANTITATIVE METHODS

СУЩНОСТЬ ИССЛЕДОВАНИЯ В ОБРАЗОВАНИИ, ЕГО КАЧЕСТВЕННЫЕ И КОЛИЧЕСТВЕННЫЕ МЕТОДЫ

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ABSTRACT

EDUCATIONAL RESEARCH, QUALITATIVE AND QUANTITATIVE RESEARCH METHODS, WAYS OF KNOWING

Our report deals with the process of pedagogical study. It is presented a brief overview of research: qualitative and quantitative research methods and explain why knowledge of various research methods can be of value to educators. We made an attempt to explain the purpose of the analysis in a comparative study of the problem. Thus, having examined the educational research, we can say that its methods of research are intended to determine the cause for or the consequences of differences between groups of people.

АННОТАЦИЯ

ИССЛЕДОВАНИЕ В ОБРАЗОВАНИИ, КАЧЕСТВЕННЫЕ И КОЛИЧЕСТВЕННЫЕ МЕТОДЫ ИССЛЕДОВАНИЯ, СУЩНОСТЬ ИССЛЕДОВАНИЯ

В нашем докладе рассматривается процесс выполнения педагогического исследования. В нем дается обзор сущности исследования, представлены способы получения знаний, объясняется необходимость постановки проблемы научного исследования. Таким образом, рассмотрев сущность педагогического исследования и его типы, можно сказать, что в зависимости от цели, предмета, объекта научного исследования, мы используем соответствующий тип изучения.

Educational research takes many forms. In our report we introduce you to the subject of educational research, research problems and explain why knowledge of various research methods can be of value to educators as research is but one way

to obtain knowledge. This is why knowledge of scientific research methodology can be of value.

Ways of knowing: Sensory experience. We see, we hear, we smell, we taste, we touch. The data we take in from the world through our senses is the most immediate way we have of knowing something.

Sensory data, to be sure, can be refined. Seeing the temperature on an outdoor thermometer can refine our knowledge of how cold it is; a top-quality stereo system can help us hear Beethoven's Fifth Symphony with greater clarity; smell, taste, touch – all can be enhanced, and usually need to be. Many experiments in sensory perception have revealed that we are not always wise to trust our senses too completely. Our senses can (and often do) deceive us: The gunshot we hear becomes a car backfiring; the water we see in the road ahead is but a mirage; the chicken we thought we tasted turns out to be a rabbit.

Sensory knowledge is undependable. Sensory knowledge is also incomplete. The data we take in through our senses do not account for all (or even most) of what we seem to feel is the range of human knowledge. To obtain reliable knowledge, therefore, we cannot rely on our senses alone but must check what we think we know with other sources.

Agreement with others. One such source is the opinions of others. Not only can we share our sensations with others, we can also check on the accuracy and authenticity of these sensations: "Does this soup taste salty to you?" "Isn't that John over there?" "Did you hear someone cry for help?" "It smells like mustard, doesn't it?"

Obviously this is a great advantage. Checking with others on whether they see or hear what we do can help us discard what is untrue and manage our lives more intelligently by focusing on what is true. The problem with such common knowledge is that it, too, can be wrong. A majority vote of a committee is no guarantee of the truth. My friends might be wrong about the presence of an approaching automobile, or the automobile they hear may be moving away from rather than toward us. Hence, we need to consider some additional ways to obtain reliable knowledge.

Expert opinion. Perhaps there are particular individuals we should consult. Experts in their field. People who know a great deal about what we are interested in finding out. We are likely to believe a noted heart specialist. Well, maybe. It depends on the credentials of the experts and the nature of the question about which they are being consulted. Experts, like all of us, can be mistaken. For all their study and training, what experts know is still based primarily on what they have learned from reading and thinking, from listening to and observing others, and

from their own experience. No expert, however, has studied or experienced all there is to know in a given field, and thus even an expert can never be totally sure. All any expert can do is give us an opinion based on what he or she knows, and no matter how much this is, it is never all there is to know.

Logic. We also know things logically. Our intellect – the capability we have to reason things out – allows us to use sensory data to develop a new kind of knowledge. Consider the famous syllogism:

All human beings are mortal.

Sally is a human being.

Therefore, Sally is mortal.

To assert the first statement (called the major premise), we need only generalize from our experience about the mortality of individuals. We have never experienced anyone who was not mortal, so we state that all human beings are. The second statement (called the minor premise) is based entirely on sensory experience. We come in contact with Sally and classify her as a human being. We don't have to rely on our senses, then, to know that the third statement (called the conclusion) must be true. Logic tells us it is. As long as the first two statements are true the third statement must be true, too [2].

There is still another way of knowing to consider: the method of science.

The scientific method. When many people hear the word "science," they think of things like white coats, laboratories, test tubes, or space exploration. Scientists are people who know a lot and the term "science" suggests a tremendous body of knowledge. What we are interested in here, however, is science as a method of knowing. It is the scientific method that is important to researchers.

What is this method? Essentially it involves the testing of ideas in the public arena. Almost all of us humans are capable of making connections – of seeing relationships and associations – among the sensory data we experience. Most of us then identify these connections as "facts" – items of knowledge about the world in which we live. We may speculate, for example, that our students may be less attentive in class when we lecture than when we engage them in a discussion. But we do not really know if what we think is true. What we are dealing with are only guesses or hunches, or as scientists would say, hypotheses.

What we must now do is put each of these guesses or hunches to a rigorous test to see if they hold up under more controlled conditions. Such investigations, however, do not constitute science unless they are made public. This means that all aspects of the investigation are described in sufficient detail that the study can be repeated by any who question the results – provided, of course, that those interested possess the necessary competence and resources. Private procedures,

speculations, and conclusions are not scientific until they are made public. The general order of the scientific method, then, is as follows:

1. Identification of a problem;
2. Definition of the problem;
3. Formulation of hypotheses;
4. Projection of consequences; 5. Testing of hypotheses.

Almost all research plans include a problem statement, an exploratory question or hypothesis, definitions, a literature review, a sample of subjects, instrumentation, a description of procedures to be followed, a time schedule, and a description of intended data analyses.

The problems touched upon in the report are of great importance. There are many different ways of obtaining information, including sensory experience, agreement with others, expert opinion, logic and the scientific method. The scientific method is considered by researchers the most likely way to produce reliable and accurate knowledge. The scientific method involves answering questions through systematic and public accumulation of knowledge. The description of some of the most commonly used scientific research methodologies in education was given. They are experimental research, correlational research, causal-comparative research, survey research, qualitative research, and historical research.

Reference

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2. Fraenkel, J. R. Wallen, N. E. How to design and evaluate research in education. – New York, 2012.