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EDUCATIONAL RESEARCH

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PERSPECTIVE OF KNOWLEDGE

DIFFERENT TYPES OF STUDIES IN EDUCATIONAL RESEARCH

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Sample Preview of the Solved Sample Question Papers

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QUESTION PAPER

June – 2023

(Solved)

EDUCATIONAL RESEARCH

M.E.S.-16

Time: 3 Hours] ***[Maximum Weightage: 70%***

Note: *All questions are compulsory. All questions carry equal weightage.*

Q. 1. Answer the following question:

Explain the scientific method of research. Discuss the strengths and weaknesses of using scientific method in educational research.

Ans. Ref. See Chapter-2, Page No. 11, 'Scientific Method'.

Or

Explain the concept of research paradigm. Differentiate between the positivist and non-positivist paradigms with suitable examples.

Ans. Ref. See Chapter-3, Page No. 14, 'Introduction', Page No. 16, 'Limitations of the Positivistic Paradigm'.

Also See. Knowledge generation if done through the scientific process then it leaves a powerful impact on the natural environment and the society. This results in the development of new fields of study. The methods like anecdotal records and projective techniques initiate within the skeleton of scientific approach or we can say the positivist paradigm. In this due period, non-positivistic paradigm had progressively become noticeable in the field of social sciences or humanities *per se* in terms of interpretation and meaning of vocal behaviour. This paradigm has helped in development of many concepts, like objectivity, generalization, status of knowledge, etc. Education covers both of these perspectives in it, but was not able to be familiar with the new trends coming in this field. Structures, processes, phenomenon, etc. are evolving in the due course of time. This is the main reason why the field of education is changing and evolving. The studies in the field of education are therefore, explainable and predictable. They need to be understood and being developed constantly.

These kinds of studies take place in education meaningfully. These studies are conducted meaningfully and study the various aspects of research. In the action researches these combinations are sometimes prove fruitful and are relevant too.

Echoes of the "positivist" and "anti-positivist" debate persist today, though, this conflict is hard to define. Authors writing in different epistemological perspectives do not phrase their disagreements in the same terms and rarely actually speak directly to each other. To complicate the issues further, few practicing scholars explicitly state their epistemological commitments, and their epistemological position thus, has to be guessed from other sources such as choice of methodology or theory. However, no perfect correspondence between these categories exists, and many scholars critiqued as "positivists" actually hold post-positivist views. One scholar has described this debate in terms of the social construction of the "other", with each side defining the other by what it is not rather than what it is, and then proceeding to attribute far greater homogeneity to their opponents than actually exists. Thus, it is better to understand this not as a debate, but as two different arguments: the "anti-positivist" articulation of a social meta-theory which includes a philosophical critique of scientism, and "positivist" development of a scientific research methodology for sociology with accompanying critiques of the reliability and validity of work that they see as violating such standards.

Q. 2. Answer the following:

Discuss the meaning and various types of hypotheses with suitable examples. Is it necessary to formulate hypothesis in all kinds of educational research? Justify your answer.

Ans. Ref. See Chapter-11, Page No. 85, 'Meaning of the Hytpthesis', Page No. 86, 'Types of Hypotheses' and Page No. 87, 'Significance' and 'Importance of a Hypothesis'.

Or

Elaborate on the various types of probability sampling techniques with suitable examples. How are probability sampling techniques different from non-probability sampling techniques?

Ans. Ref. See Chapter-12, Page No. 90, 'Probalility Sampling', Page No. 91, 'Probability Smapling' and Page No. 93, 'Non-Probability, Sampling'.

Q. 3. Answer any *four* of the following questions:

***(a)* Explain the significance of conducting review of related literature.**

Ans. Ref. See Chapter-23, Page No. 169, 'Review of Related Literature'.

***(b)* Discuss the need of a control group in an experimental research.**

Ans. Ref. See Chapter-6, Page No. 49-50, 'Controls in Experiment'.

***(c)* Differentiate between parametric and non-parametric data analysis.**

Ans. Ref. See Chapter-14, Page No. 106, 'Quantitative Data'.

***(d)* Discuss the advantages of using a questionnaire in comparison to an interview method.**

Ans. Ref. See Chapter-13, Page No. 95, 'Questionnaire', 'Characteristics of a Good Questionnaire', 'Advantages' and Page No. 100, 'Interview' and Page No. 101, 'Limitations of Interview'.

***(e)* Differentiate between the internal and external criticisms in historical research.**

Ans. Ref. See Chapter-9, Page No. 75, 'External Criticism' and 'Internal Criticism'.

***(f)* Explain the characteristics of a normal probability curve.**

Ans. Ref. See Chapter-14, Page No. 111-112, 'Normal Probability Curve'.

Q. 4. Answer the following question:

Identify a problem for conducting an experimental research in education. Develop a research proposal for the same.

Ans. Ref. See Chapter-6, Page No. 47, 'Validity of Experimental Design', Page No. 49, 'Controls in Experiment' and Chapter-7, Page No. 61, 'Steps in Experimental Research'.

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Sample Preview of The Chapter

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EDUCATIONAL RESEARCH

PERSPECTIVE OF KNOWLEDGE

Introduction to Educational Research

1

INTRODUCTION

Every person's knowledge doubles after an estimated eight years. The curiosity to know something leads to this increase in the knowledge; this knowledge is also called as "human commonwealth". All people use this commonwealth and add on something or the other to it. Today's generation is called as the age of knowledge. In today's world countries compete with each other to acquire such knowledge. Developed countries use their strong system to generate knowledge by using research and developmental programmes. Newer and newer knowledge leads to new technologies and that leads to development; which in turn help in solving problems in every sphere of our life.

The other reason for the generation of knowledge is the decisions people take in their personal and professional lives. Quick and right decision-making is not an easy task for each person concerned. Our country is keen to improve its education system and to make it approachable for the country's development. Education has to be such that which helps in solving our problems. The work of the development of education system and educational research is of utmost importance.

CHAPTER AT A GLANCE

KNOWLEDGE: NATURE AND TYPES

What is Knowledge? The word knowledge has been derived from the verb 'to know'. It consists of all that a person knows and believe in. This is personal knowledge. Personal knowledge of a person differs from one person to other person. A person's knowledge is purely subjective. But in researches, when we talk about knowledge we mean the scientific knowledge of a person. Scientific knowledge can be tested, examined and validated. Scientific knowledge is accepted by researchers only. Knowledge is considered with how we come to know, what the approved standard, etc is. Notion of knowledge is associated with philosophical traditions–empirical, pragmatic, and rationalistic.

As per rationalistic tradition, knowledge can be derived from deductive knowledge. It is not necessary that it depends on experiences only, it also relies on reasoning. According to rationalist, mathematics is the only ideal science. Mathematicians are not the ones who conduct surveys, but their reasoning helps them to arrive at truth.

Empirical Tradition: According to this tradition, true occurrences can be known through experience only. Human mind have the ability to compare, contrast, merge, investigate, examine whatever comes through it by the process of experience. This tradition says that learning of a person is highlighted through experience.

Pragmatic Tradition: This tradition stresses that experimental character of acquiring knowledge, implementation of logical operations is not at all sufficient. Pragmatists are in favour of experiments whose base is on controlled observation of procedures. Pragmatists articulate that our mind has the competence to generate ideas so that the problems can be resolved.

Types of Knowledge

Declarative Knowledge: According to Biggs (1999), knowledge is of many kinds. Knowledge refers to the knowledge about things. It is generated by research only. The knowledge is about the solar system, universe, how children learn, how seasons are formed, etc. The other name of this knowledge is public knowledge.

Functioning Knowledge: This knowledge is concerned with the how do a person reaches a particular conclusion. This knowledge is convincingly entrenched in declarative knowledge. A person has to be resilient in declarative knowledge and must know what is to be done, only then this knowledge can become functioning knowledge. When the declarative knowledge is used to solve problems, it becomes functioning knowledge.

Procedural Knowledge: This is basically skill-based knowledge. It is not strict like that declarative knowledge. This knowledge works best when apposite proficiency in a specific topic. It is based on presentation of accurate proceedings.

Conditional Knowledge: This kind of knowledge is based on both procedural and declarative knowledge. It enlightens a person about how to behave in a particular situation.

SOURCES OF KNOWLEDGE

To solve the problems of daily life people attempt to enhance their knowledge. To get knowledge they rely on subsequently upcoming sources of knowledge.

Experience: Experience as a general concept comprises knowledge of or skill in or observation of some thing or some event gained through involvement in or exposure to that thing or event. Every person learns from his experiences. Knowledge is enhanced through experiences. Still it is not reliable to base only on experiences.

Social Customs and Traditions: We come to know about our customs and traditions through our elders. If we stuck in a situation and don't know what to do, in that case we rely upon our traditions. They differ from society to society and from culture to culture. As change is an inevitable part of our life, so dependence solely upon our customs and traditions is not true. They do not have scientific basis so relying upon them is purely ineffective.

Reasoning: Reasoning is the way of reaching truth of determines exactness by using our logic. Reasoning is majorly of two types: inductive reasoning and deductive reasoning. Deductive reasoning arrives at a specific conclusion based on generalization. Deductive reasoning is reasoning that involves a hierarchy of statements or truths. Starting with a limited number of simple statements or assumptions, more complex statements can be built up from the more basic ones. A deductive argument is valid if the conclusion does follow necessarily from the premises, i.e. if the conclusion must be true provided that the premises are true. A deductive argument is sound if it is valid and its premises are true. Deductive arguments are valid or invalid, sound or unsound, but are never false nor true. Deductive reasoning is a method of gaining knowledge.

Inductive reasoning is essentially the opposite of deductive reasoning. It involves trying to create general principles by starting with many specific instances. In inductive reasoning, we begin with specific observations and measures, begin to detect patterns and regularities, formulate some tentative hypotheses that we can explore, and finally end up developing some general conclusions or theories. In deductive reasoning we go from general to specific and in inductive reasoning we go from specific to general.

Scientific Method: This method was invented to shun the shortcomings of the above mentioned two reasonings. This is a method of research. Research follows a standard set of process which solely relies on scientific method. The other name of this method is hypothico-deductive paradigm. The following steps are the way through which a scientific research takes place:

Step 1 : A concept subsists concerning obser-vable fact.

Step 2 : The investigator discover and enquires about the concerning problem.

Step 3 : Researcher put together research hypothesis on the basis of the theory. Research hypothesis are testable statements having possible relationship between two or more variables.

Step 4 : Investigator explains the exact method of conducting research. Researcher devise null means (0) hypothesis, which he can test scientifically. He conducts this by a plan of action for testing the hypothesis.

Step 5 : Researcher carry out the research as per his research design and data collection also goes according to that.

Step 6 : The null hypothesis is tested by the researcher using the data collected by him.

Step 7 : The null hypothesis are rejected or accepted by relying on the statistical tests. If hypothesis are accepted, the theory is confirmed and if that rejected then the researcher has to reformulate the hypothesis and again test the results to solve the research problem. In case of rejection of hypothesis the step no. 2-7 are again repeated.

NATURE AND CONCEPTIONS OF SOCIAL REALITY

From the most primitive period, man is attempting to be aware about the world in which he is living. This plan can be divided in two fractions: *(a)* the physical environment which comprise in natural environment and the things or artifacts created by human being and *(b)* the social environment which is a principal feature of human society. Social reality is the term given to social environment. Becoming adult in a particular

environment forms our life-style, attitudes, beliefs, value systems, etc. These beliefs and values differ in one society from the other and they also tend to change with the changing times.

The way we perceive social reality ascertains a person's conception about the social reality. From decades, man has assumed that social reality and physical reality are same. It was thought that social reality will persist either man is a part of it or not. Investigating social reality has helped man to give birth of new science, i.e. social sciences, in the same manner the physical reality has given birth to physical sciences. This conception of social reality would be called the objectivists conception.

There's one another view which is just the opposite of objectivists view is subjectivists view or conception. Man may appear similar but actually they all are different from each other. Subjectivists say that humans live in two worlds at the same moment i.e. their physical world and their social world. The conduct of man can never be justified by the laws of physical world. Social reality is ever changing. It is not stagnant. This reality is always in a state of flux. This reality is based on distinctive postulations. These postulations are based on the following points:

(a) Indispensable nature of man.
(b) Nature of knowledge. The way of acquiring knowledge.
(c) Defining human nature and its characteristics.
(d) Methods to study social phenomena and the human nature.

The supporters of objectivism trust that reality exists free from human beings. The reality is evident and observable. They believe that world is the product of human thought and consciousness. About knowledge, how it is acquired. They believe knowledge can be evaluated into a touchable object. We can pass it or it can be overtake by one man to the other. If one does not possess it, he can acquire it from other persons living in the world. Subjectivists say that knowledge must be practiced and one must build it on their own. From subjectivists point of view, this knowledge is individual, special and exceptional. Objectivists say that the nature of man is programmed, human beings react differently in different situations. They usually respond in un-thinkingly and machinery approach. Subjectivists in this respect say that, human nature is differentiated by intentional and freedom of choice. As about going about the study of human nature objectivists say that research should take place on explaining human behaviour. Differences notification is not an important task as is the finding of similarities. Subjectivists say that researches should emphasize about the unique qualities of human beings. The focus must be to explain the specific and precise information rather than searching the universal.

The methods are of totally different view from one another so as the methods proposed by them. Objectivists say that experimental method is good. And subjectivists say that ethnographic methods should always be used to study human behaviour wherein human behaviour can be observed in its natural form.

PURPOSES OF RESEARCH

Investigation helps a person in finding something new and building up his own knowledge. It helps in testing existing knowledge and also helps in creating new knowledge. Research is an important practice of administering disciplinary enquiry. Research caters the following purposes:

Generation of Knowledge: Research helps in confirming the presented information. It also helps in accomplishing new knowledge. For example, the different theories of learning explain how human beings learn. Behaviourist says that how a person forms a particular habit and learns by that way. Information processing theory explains how sensations make meaning in our mind and how do we store data or information and how well our memory gets organized. Generation of knowledge is very carefully planned and conducted in controlled situations. This kind of theory is known as basic research or fundamental research.

Problem-solving: Educationist faces many problems regarding the different methods of teaching and several other things. All these problems lead to finding the solutions to the problems to promote the ways of learning and development. All the problems cannot be solved by hitting and trying to find out the solution. Research demands time and energy of the researcher. It is a systematic enquiry which helps in discovering new methods of teaching and learning. Problem-solving research is also known as applied research. The majority of researches in the field of education are applied researches because they are concerned with formulation of procedures and consequences.

Action in Specific Situations: Quite frequently classroom teachers face problems which do not permit them to take an action as they may like. To study the causes behind the problem teachers take the responsible steps and try to finish or solve the problem at their own. Sometimes teachers exchange their own experiences regarding this. Taking an immediate action in a particular situation sometimes becomes mandatory. Researches which serve this purpose of taking immediate action are called as action research.

Training of Future Researchers: Study also work for the function of making ready upcoming researchers by supplying them planned research skill, which may be originally relatively straightforwardly projected but later on become complex. Ph.D scholars also conduct research which prepares them to do researches when they actually face problems in the field.

WHAT IS EDUCATIONAL RESEARCH?

Research is the orderly investigation of a subject-matter for the purpose of adding to knowledge. Research can means 're- search' implying that the subject-matter is already known but, for one reason or another, needs to be studied again. Alternatively, the expression can be used without a hyphen and in this case it typically means investigating a new problem or phenomenon.

Research is differentiated by the upcoming attributes:

- The basis of educational research is inductive and deductive reasoning where researcher scrutinizes the facts and the formulation of reasonably measurable hypothesis and it also tests the validity of the reasoning empirically. Hypothesis are checked for further observations.
- Research is testable in nature. Educational research carries through organized and methodical study of the facts which researcher can observe, measure and record.
- The process of research is correctable and rectifiable. The outcome of research which interests the researcher is disapproval of new data. This is because of the fact that researcher takes safety measures to elude errors. Researcher in the same field removes the error of the previous research. Therefore, we can say that educational research is self-correcting in nature.

Within the realm of educational planning, many things are always changing i.e. the structure of the education system, curriculum and textbooks, modes of teaching, methods of teacher training, the amount and type of provisions to schools such as science laboratories, text-books, furniture, classroom supplies, and so on. These changes may lead to an improvement, or a worsening, in the quality of an educational system. Sometimes they may result in no impact upon quality – in which case major government expenditures on such changes have been wasted. The educational planner working within this kind of environment must be able to undertake assessments of the effects of major changes and then provide policy advice that will consolidate and extend the post-productive courses of action, and also intercept and terminate existing practices that are shown to be damaging and wasteful.

SCOPE OF EDUCATIONAL RESEARCH

The classification of educational research is as under:

Classification by Levels of Education: This classification's outcome in research is the pre-school education and the researches which take place in primary, secondary and tertiary levels of education. In secondary and tertiary levels of education researches are conducted on face-to-face education mode and on open and distance learning mode.

Classification by Curriculum Areas: This classification consequences in the researches at various levels of school curriculum. Like education of different subjects–art education, business studies, science, language, mathematics, etc. Under these areas there are also sub-areas also. In the area of teacher education the following areas come–philosophy of education, sociology of education, educational technology, value education, peace education, etc. Research studies can be conducted in these areas in pre-service teacher education and in-service teacher education programmes.

Classification by Research Methods Used : Educational research can also be categorized according to the research methods used in a particular study. Those categorizations may generate historical type of research, ethnographic research, developmental research, etc.

The above mentioned three classification types don't explain the assortment of studies in the educational research. As the time passes, new precedence come in the field of educational research. The first research on education was published in 1974 and the fifth research which conducted in 1997 has variety of changes. The research studies had 38 total headings from 1974 to 1997.

Now after almost 23 years more new areas of educational research have emerged. The substantial quantity has also carried out in each of the area of educational research.

Teaching as a method of research is a big area on which a research can be performed. Let us now see changes which have come in the teaching (with the help of research). The year 1963 was a watershed year in the field of research in teaching. The Gage's book was the first handbook published in field of educational research. In 1986, third handbook was published by M.C. Wittrock which has 23 areas of research in the field of teaching. The numerical differences in the Gage's book and Wittrock's book are not a thing to be noted. The main thing to be examined is the development of the field in these years.