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Unit -I

INTRODUCTION TO RESEARCH METHODS

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Unit -1
Introduction to Research Methods

Definition:

"In research a careful, systematic and objective investigation is conducted to obtain validfacts, draw conclusions and establish principles regarding an identifiable problem in some field of knowledge"–H. Harrison Clarke.

G.J. Mouly defines, "Research is simply the process of arriving at dependable solution to a problem through the planned and systematic collection, analysis and interpretation of data".

NEED & IMPORTANCE OF RESEARCH IN PHYSICAL EDUCATION:

1. It reduces the effort and increases the efficiency.
2. Dignifies the work.
3. Brings confidence.
4. Leads to adoption of new methods.
5. Bring a sense of awareness.
6. Keeps alert.

7. It controls the factors of social behaviour.
8. Better understanding of teaching & learning process.
9. It promotes educational reforms.
10. Research brings objectivity.
11. Research leads to cultural, social, economic & scientific development.
12. Research is needed for selection.
13. Research helps in identifying the talents.

Scope:

Physical education and sports are considered as very vital disciplines of human life and aloof research work have been done.

The following constitute the field of knowledge in which course of study have been established and research is being conducted.

1. Physiology of exercise role of various factors as they relate to human movement, kinesthetic

learning, retention and transfer.

2. History–history of associations, organizations, games biographies-development of games.
3. Sports sociology-social behave or related to sports.
4. Sports psychology–personality-emotional and motivational aspects of sportspersons.
5. Growth and Development–motor characteristics and other relationship to mental achievements, emotionalist ability etc.,
6. Rehabilitation of medicine- physical therapy, correction therapy–recreation therapy–sports medicine–health education.
7. Recreational activities for the betterment of society.

Classification

FUNDAMENTAL OR BASIC RESEARCH

It is also called as pure research. Actually the fundamental or basic research seeks no immediate practical outcome. It seeks to help for the betterment of human life. This research is

connected with finding out the universally applicable theories e.g. growth and development, learning theories. Heredity and environment, educational values, curriculum etc. The fundamental research is usually carried on in laboratory situations & sometimes with the animals as subjects.

Applied Researches

It is also called as field research. It is having most of the characteristics of basic research. Its purpose is to improve a product or a process. Most of the educational researches are applied researches and they attempt to develop generalisations about teaching learning processes and instructional materials. The theories or principles developed or invented by the fundamental research are being applied to various fields in applied research.

ACTION RESEARCH

It is focused on immediate application. It is primarily conducted on the immediately available small samples. Action research is conducted by educational practitioners. A teacher conducts action research to improve his own teaching, school administrator conducts action

research to improve his administration, a coach conducts action research to improve his coaching and to produce good results and so on.

Meaning of research problem

A problem in research is infect a gap in the knowledge, a situation which requires solution. It is the first step for the discovery of new facts by following certain research procedures. According to dictionary meaning problem is a matter, difficult for settlement or solution, a question or puzzle propounded for solution.

LOCATION & CRITERIA FOR SELECTION OF PROBLEM

To solve the problem, reaching to a problem, finding & detecting a problem etc. to choose to select.

1. Systematically record unsolved problems.
2. Analyse literature in an area or a subject field.
3. Analyse an area of special interest.
4. Consider support from former studies.

5. Examine controversial study.
6. Become informed of researches going on in colleges/universities.
7. Consult faculty members.
8. Discover interest of association/society and various professional groups.
9. Group/individual discussion.
10. Sports scientists who undertake research studies are of big help in locating feasible problems of research.

CRITERIA OF SELECTING OF RESEARCH PROBLEM:

1. Novelty
2. Interesting
3. Significance of the problem
4. Researchers competency
5. Courage and confidence
6. Feasibility

7. Availability of data
8. Availability of guidance
9. Availability of co-operation
10. Availability of other facilities
11. Level of research
12. Experience and creativity.

Formulation of research problem

1. Identify a general area of interest

As you determine an area of study, consider areas that haven't been explored thoroughly or present challenges within a particular field. Assess how you might address the area of concern and whether you can develop a research problem related to this issue. If your research is action-based or applied, consider contacting those who work in a relevant field to attain feedback about problems to address. You can also follow up on research that others have already conducted.

2. **Learn more about the problem**

The next step is to learn more about the area of interest. Ask yourself what you need to know about a particular topic before you begin your study. Assess who or what it might affect and how your research could address those relationships. Consider whether other research groups have already tried to solve the problem you're interested in analyzing and how your approach might differ.

3. **Review the context of the information**

Reviewing the context of your research involves defining and testing the environmental variables in your project, which may help you create a clear and focused research problem. It may also help you note which variables are present in the research and how to account for the impact that they may have on it. By reviewing the context, you may easily estimate the amount of data your research is likely to require.

4. **Determine relationships between variables**

After identifying the variables involved in your research, you can learn how they're related to

one another and how these relationships may contribute to your research problem. Consider generating as many potential perspectives and variable interactions as possible. Identifying the relationships between variables may be useful when deciding the degree to which you can control them in your study and how they might affect potential solutions to the problem you're addressing.

5. **Select and include important variables**

A clear and manageable research problem typically includes the variables that are most relevant to the study. A research team summarizes how they plan to consider and use these variables and how they might influence the results of the study. Selecting the most important variables can help the study's audience better understand the trajectory of your research and the potential impact of the solution.

6. **Receive feedback and revise**

Consider contacting mentors, teachers or industry experts for feedback on your research problem. They may present you with new information to consider or suggest you edit a

particular aspect of your research design. Revising your research problem can be a valuable step in creating impactful and precise research, as well as developing beneficial research skills.

Hypothesis

Hypothesis means less than or less certain than a thesis. Presumptive statement of a proposition or a tentative guess based upon available evidence. It is a tentative or working proposition suggested precisely as a solution to the problem.

Research limitations

Research limitations are, at the simplest level, the weaknesses of the study, based on factors that are often outside of your control as the researcher. These factors could include things like time, access to funding, equipment, data or participants. For example, if you weren't able to access a random sample of participants for your study and had to adopt a convenience sampling strategy instead, that would impact the generalizability of your findings and therefore reflect a limitation of your study.

Research Delimitations

The delimitations of a study refer to the **scope of the research aims and research questions**. In other words, delimitations reflect the choices you, as the researcher, **intentionally** make in terms of what you **will** and **won't** try to achieve with your study. In other words, what your research aims and research questions **will** and **won't** include.