

How to Develop a Research Paper

A One-Day Workshop Held for IRIB
Staff

Background

- n What do we mean by a research paper?
 - n A research paper is a report that an individual presents to others about the conclusions he or she has reached after investigating a subject and critically assessing the evidence he or she has gathered.

Background

- n What do we mean by evidence?
 - n Evidence refers to the facts and inferences used by the researcher to develop an argument to support a hypothesis/thesis.
 - n Facts are pieces of information that can be observed and measured objectively.
 - n Inferences are statements about the unknown made on the basis of the known.

Background

- n What do we mean by method or methodology?
 - n Members of a disciplines have sought systematic objective ways to uncover facts about their objects of study, and systematic objective ways to examine and evaluate what these facts mean so that their inferences are open to further testing. These systematic, objective ways of uncovering facts and examining and evaluating their meaning are usually called methods or methodologies.

Background

- n What do we mean by theory?
 - n The implications of researchers' findings provide insights about what the subject is and how it works. These implications are formulated in the form of theories. There are often a number of rival theories with their own methodologies for collecting and analyzing data.

Background

- n What do we mean by hard and soft sciences?
 - n Different disciplines define in different ways what they mean by valid and meaningful knowledge. There are boundaries between science, humanities and social sciences. These dividing lines are created by critical differences in how one arrives at meaningful and valid knowledge. This distinguishes between hard and soft sciences.

Background

n Hard Sciences

- n Hard sciences- pure and applied natural sciences and some areas of the social sciences- are so called because they prefer empirical modes of testing, modes that rely on mathematical models and/or the use of instruments.

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n Soft Sciences

- n The humanities take as their subject of inquiry artifacts of conscious human construction: paintings, musical compositions, the written texts-literary historical autobiographical etc. In humanities, meaningful knowledge about these artifacts is determined by “reading” them through the framework of an accepted mode of interpretation, a mode derived from a particular theory.

Background

- n What do we mean by primary research?
 - n A research project falls into the category of primary research when the main focus of the researcher's investigation is some actual manifestation of the discipline's primary source of evidence. The primary source of evidence would differ in hard and soft sciences.

Background

- n What do we mean by secondary research?
 - n The researcher who undertakes secondary research turns to the books and articles published by his colleagues for evidence. The evidence he seeks is not only the facts and data they've uncovered but also the inferences they've drawn to make sense of the data

Background

- n What do we mean by working thesis/hypothesis?
 - n To do a research, a researcher starts with his own assumptions. He needs to turn these initial assumptions into one considered statement that answers his initial research question. This statement would be the working hypothesis which would give him one way of making sense of the subject of his study.

Background

- n How do we formulate a working thesis?
 - n Strategy 1: discovering your assumptions about your area of investigation
 - n Strategy 2: turning judgmental statements into inferences
 - n Strategy 3: defining your terms

Background

- n What are the different types of research papers?
 - n Studies and experiments
 - n A review of literature paper
 - n Critical papers

Background

n Studies and experiments

- n The researcher would select procedures for collecting data that is regularly used by experts and use an accepted quantitative or qualitative method for analyzing the data she obtains. Success will depend on the hypothesis and the method selected to test it.

Background

- n A review of literature paper
 - n A researcher who sets out to write such a paper is engaged in a secondary research project. He tries to find out the basic trends and developments in the field's quest for knowledge about a topic. He will try to bring into focus patterns of investigative procedures and the theories that drive them, and of the knowledge they produce.

Background

n Critical papers

- n These papers can be written by researchers engaged in secondary type of research in any field. It could also be the culmination of primary research projects undertaken in the soft sciences or humanities. The central characteristic of these papers is that they are arguments.

Background

n Critical papers

- n In the opening paragraph of such papers the writer presents her point of view in an assertion or claim or conclusion usually called a thesis statement. She devotes the rest of the paper to explaining how and why she reached this conclusion.

Background

n Critical papers

- n In critical paper you begin by formulating a working thesis, a claim or an assertion you would make about your topic now, an assumption open to an objective systematic examination. What you need to do such an assessment is a frame of analysis.

Background

- n What do we mean by a frame of analysis?
 - n A frame of analysis is a methodology, different in kind but not in purpose from the investigative procedures the hard sciences use for collecting and assessing data. The frame of analysis you choose will be provided by theory, a model, or an investigative approach that is currently popular or generally accepted in the field.

Background

- n What do we mean by testing and evaluating evidence?
 - n Testing is very different from rationalizing, justifying, or proving. The researcher should go through critical evaluation of facts and opinions. This is done through adopting an appropriate research design in hard sciences and a frame of analysis in soft sciences.