

Applied research

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What is research ?

- Webster's Third International Dictionary of the English Language defines research as "studious inquiry or examination, especially critical and exhaustive investigation or experimentation, having for its aim the discovery of new facts, and their correct interpretation, the revision of accepted conclusions, theories, or laws in the light of newly discovered facts, or practical applications of new or revised conclusions, theories, or laws."

What is research?

- Ranganathan (2015) describes research to represent a critical and exhaustive investigation to discover new facts, to interpret them in the light of known ideas, theories and laws, to revise the current laws and theories in the light of the newly discovered facts to apply the conclusion to practical purpose (ANUPAMA SAINI, 2017)

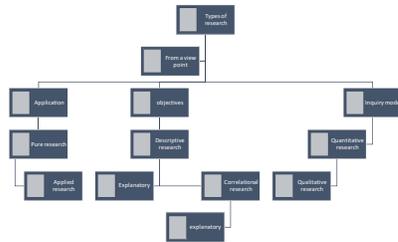
The substance of all these samples of definitions of research can be broadly summed up.

What is research ?

To restate, the substantive phrases that stand out in all these definitions of research are that research is an activity as characterized below:

- An intellectual activity of a high order;
- An investigation of a phenomenon, event or activity;
- Aims to discover data and facts and their interpretations;
- To arrive at conclusions to formulate new theories and laws or revise the already established theories and laws;
- To communicate the results for peer review; and
- To be accepted or rejected before adding this new knowledge to the already existing general pool of knowledge
(ANUPAMA SAINI, 2017)

Typology of research



- Basic Research is also known as ‘fundamental’ or ‘pure’ research. Basic research studies phenomena to get a fuller understanding of it. This is essentially to obtain knowledge of a natural phenomenon whose applications may or may not have any bearing on any application in the immediate future or even after a long time. Hence, it is fundamental in nature.

- Generally this type of research demands a very high order of intellectual calibre as well as intuition. Those who are involved in basic research devote their efforts to the formulation or reformulation of theories and may not be concerned at all with their practical application.

- The knowledge obtained thus expands the theoretical base of a subject.
- Generally, basic research is conducted by intellectuals at academic institutions who are specially commissioned for this purpose. E.g. research institute or university
- As Dr. George Smoot of LBNL says, "People cannot foresee the future well enough to predict what's going to develop from basic research. If we only did applied research, we would still be making better spears."
- My concern in here is the applied research

What is applied research?

- Applied research on the other hand, is to acquire knowledge on the practical application of the theoretical base already built up which is expected to solve a critical problem. E.g. causes of high illiteracy level in rural areas, political violence during general elections in Zambia, causes of high failure rates at secondary schools in rural Zambia
- Applied Research is usually conducted for industries or governments by universities or by specialized research laboratories or institutions or consultants.
- Applied Research is always for development purposes. It is generally referred to as Research and Development (R&D).
- Hence, applied research is designed to solve practical problems of the modern world, rather than to acquire knowledge for knowledge's sake. One might say that the goal of the applied scientist is to improve the human condition.
- Some scientists feel that the time has come for a shift in emphasis away from purely basic research and toward applied science. This trend, they feel, is necessitated by the problems resulting from global overpopulation, pollution, and the overuse of the earth's natural resource

Applied Research:

- Applied Research is carried on to find solution to a real life problem requiring an action or policy decision. It is thus problem oriented and action directed. It has an immediate and practical use. There is a vast scope for applied research in the field of Technology , Management, Commerce, Economics, engineering, and other social sciences.
- Applied research can contribute new facts:- It can put theory to the test. it may aid in conceptual clarification. it may integrate previously existing theories. Example of Applied Research:- 1. Market research carried on for developing a new market or product

Characteristics of Applied Research

1. Applied research is solution-specific and addresses practical questions.
2. It involves collection and analysis of data to examine the usefulness of theory in solving practical educational problems.
3. It can be explanatory but usually descriptive.
4. It involves precise measurement of the characteristics and describes relationships between variables of a studies phenomenon.

Action Research

- Action research is an extension of applied research. It has its origin in the works of the social psychologist Kurt Lewin (1946).
- According to John Best & Kahn, "Action research is focused on the immediate application and not the development of theory. It has placed its emphasis on a real problem in a local setting. Its findings are to be evaluated in terms of local applicability, not in terms of universal validity."
- Hence, action research is focused on immediate application, not on the development of a theory, not upon general application. It has placed its emphasis on a problem here and now in a local setting (ANUPAMA SAINI , 2017)

- Most of the research in the social sciences is applied research. In other words the research techniques, procedures, and methods that form the body of research methodology are applied to collection of information about various aspects of a situation, issue, event, activity, , program, actions, problem or phenomena so that information gathered can be used to find the solution-such as policy formulation, administration and enhancement of understanding of a phenomena or design an intervention to prevent further harm.

objectives

- If you examine an applied research from the perspective of its objectives, broadly a research endeavor can be classified as descriptive, correlational, explanatory or exploratory.
- An applied study classified as descriptive attempts to describe systematically a situation, outcomes, problem, phenomena, service, program, or providers of information about , say, the living conditions of a community in Lusaka or describes attitudes towards an issue.
- For example, it may attempt to describe the types of service provided by an organization like ZESCO(Zambia Electricity supply Corporation), the administrative structure of LIUTEBM university, the living conditions of people in chawama compound in Lusaka, the needs of a community in matero compound, what it means to go through a divorce, how a child feels living in house with domestic violence, or the attitudes of employees towards management.

objectives

- Explanatory research attempts to clarify why and how there is a relationship between two aspects of a situation or phenomena. This type of research attempts to explain, for example, why stressful livings results in heart attacks, why decline in mortality is followed by fertility decline, or how the home environment affects children's level of academic achievement.
- Exploratory is when a study is undertaken with the objective either to explore an area where little is known or to investigate the possibilities of undertaking a particular research study. When a study is carried out to determine its feasibility it is called a feasibility study or pilot study.
- It is usually carried out when a researcher wants to explore areas about which he/she has little knowledge or no knowledge.
- A small scale study is undertaken to decide if it is worth carrying out a detailed investigation.
- Exploratory studies are also conducted to develop, refine, and/or test measurement tools and procedures

objectives

- The main purpose of such studies is to describe what is prevalent with respect to the issue or problem under study
- The main emphasis in a correlational applied research study is to discover or establish the existence of a relationship/association/interdependence between two or more aspects of a situation. E.g.
- What is the impact of an advertising campaign on the sales of a product? What is the relationship between stressful living and incidence of heart attack? What is the relationship between fertility and mortality? What is the relationship between technology and unemployment? What is the effect of a health service on the control of a disease, or the home environment on educational achievement.
- These applied studies examine whether there is a relationship between two or more aspects of a situation or phenomena and, therefore, are called correlational studies

Inquiry mode

- The third perspective in the typology of research in applied studies concerns the process you adopt to find answers to your research questions. Broadly, there are two approaches:
 - The structured approach
 - The unstructured approach
- The structured approach to inquiry is usually classified as quantitative research and unstructured as qualitative research.
- In a structured approach everything that forms the research process-objectives, design, sample, and questions that you plan to ask of respondents-is predetermined.
- The unstructured approach allows for flexibility in all these aspects of the research process and allows participants views to be taken into account.
- The structured approach is more appropriate to determine the extent of a problem, issue, or phenomena, unstructured , to explore its nature.

Characteristics of Action Research

1. It is situational.
2. It is a reflective inquiry.
3. It is based on scientific approach.
4. It is a scientific way of solving problems.
5. It is a small scale intervention.
6. It is a unified exercise to bridge the gap between theory and practice.
7. Its emphasis is not on obtaining general scientific knowledge but on obtaining knowledge concerning a specific local problem

Examples of applied research

- Improve agricultural crop production
- Treat or cure a specific disease
- Improve the energy efficiency of homes, offices, or modes of transportation
- To diagnose the very low use of a certain collection in a library
- To investigate the causes of poor solid waste management by Lusaka city council
- Investigating which treatment approach is the most effective for reducing anxiety

- Researching which strategies work best to motivate worker
- Studying different keyboard design to determine which is the most efficient and ergonomist
- Analyzing what types of prompts will inspire people to volunteer their time to charity
- Investigating if background music in a work environment can contribute to greater productivity

- As you may notice, all of these examples explore topics that will address a real-world issues. This immediate and practical application of the findings is what distinguished applied research from [basic research](#), which instead focuses on theoretical concerns.
- Basic research tends to focus more on "big picture" topics, such as increasing the scientific knowledge base around a particular topic. Applied research tends to drill down more toward solving specific problems that affect people in the here and now.

How Does Applied Research Work?

- For example, a social psychologist performing basic research on violence might look at how different factors might contribute to violence in general. A psychologist conducting applied research might tackle the question of what type of programs can be implemented to reduce violence in school settings.
- However, researchers also suggest that basic research and applied research are actually closely intertwined. Basic research often informs applied research, and applied research often helps basic researchers refine their own theories. As you can see in the example above, the information learned from basic research often builds the basis on which applied research is formed
- Applied research usually start by identifying a problem that exists in the real world. Applied psychologists then conduct research in order to identify a solution. The type of research that is used can depend upon a variety of factors include unique characteristics of the situation and the kind of problem psychologists are trying to solve. Researchers might opt to use [naturalistic observation](#) to see the problem as it occurs in a real-world setting. They might then conduct experiments to help determine why the problem occurs and to explore different solutions that might solve it.

Formulating research problem in applied research

- Broadly speaking, any question that you want to answer and any assumption or assertions that you want to challenge or investigate can become a research problem or topic for your study. However, it is important to remember that not all questions can be transformed into research problems and some may prove to be extremely difficult to study. According to Power et al.(1985:38), "potential research questions may occur to researchers on a regular basis, but the process of formulating them in a meaningful way is not at all an easy task".
- Formulating a research problem is the first and most important step of the research process. It is like the identification of a destination before undertaking a journey. As in the absence of a destination, it is impossible to identify the shortest route to get there. The research problem is like the foundation of the building. The design and type of the building is dependent upon the foundation.
- If the foundation is well designed and strong you can expect the building to be also. The research problem serves as the foundation of a research study. If it is well formulated, you expect a good study to follow. According to Kerlinger(1986), "if one wants to solve a problem, one must generally know what the problem is. It can be said that a large part of the problem lies in knowing what one is trying to do." most research problems in applied research revolves around four Ps:
 - People
 - Problems
 - Programs
 - Phenomena
- The emphasis on a particular P may vary from study to study but generally, in practice, most applied research studies are based upon at least a combination of two Ps. You may select a group of individuals(a group or a community-people), either to examine the existence of a certain issues or problems relating to their living conditions.

Potential Challenges in Applied Research

- As with any other types of research, challenges can arise when conducting applied research in psychology and management. Some potential problems that researchers might face when performing this type of research include:
 - *Ethical challenges.* When conducting applied research in a naturalistic setting, researchers may come across concerns about privacy and informed consent. In some cases, such as in workplace studies conducted by industrial-organizational psychologists, participants may feel pressured or even coerced into participating as a condition of their employment.
 - *Problems with validity.* Since applied research often takes place in the field, it can be difficult to researchers to maintain complete control over all of the [variables](#). Extraneous variables can also exert a subtle influence that the experimenters may not even consider or realize are having an effect on the results. In many cases, researchers are forced to strike a balance between a study's ecological validity (which is usually quite high in applied research) and the study's internal [validity](#).
 - Since applied research focuses on taking the results of scientific research and utilizing it directly in real world situations, those who work in this line of research tend to be more concerned with the external validity of their work.
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- External validity refers to the extent that scientific findings can be generalized to other populations. Researchers don't just want to know if the results of their experiments apply to the participants in their studies. They want these results to also apply to larger populations outside of the lab
 - "Because applied research investigates realistic problems, applied researchers are often concerned with the external validity of their studies. This means that they attempt to observe behaviors that can be applied to real-life situations," explains Dawn M. McBride in *The Process of Research in Psychology*.
 - "This is important because these researchers want to be able to apply their results to a problem that applies to individuals who are not participants in their study (as well as to those individuals who were observed in the study. External validity is also a consideration in basic research but in some cases can be less important that it is in applied research."
 - **How Is Applied Research Used in the Real-World?**
 - What are some examples of how applied research is used to solve real-world problems?
 - A hospital might conduct applied research on how to prepare patients for certain types of surgical procedures.
 - A business might hire an applied psychologist to assess how to design a workplace console to maximize efficiency and productivity while minimizing worker fatigue and error.
 - An organization might hire an applied researcher to determine how to select employees that are best suited for certain positions within the company.

Conclusion

- Applied research is an important tool in the process of understanding the human mind and behavior.
- Applied research aims at finding a solution for an immediate problem facing a society or an industrial/business organization.

Examples of types of research studies from the view point of objectives

Examples	Aim	Main theme	Type of applied research
Socioeconomic characteristics of residents of a particular community Attitudes of students towards quality of teaching in a university Types of service provided by an agency Needs of a community Sales of a product Attitudes of nurses towards death and dying Attitudes of workers towards management Number of people living in the community Problems faced by new immigrants Extent of mobility among immigrants Consumers' likes and dislikes with regard to a product Effects of living in a house with domestic violence	To describe what is prevalent regarding: <ul style="list-style-type: none"> • a group of people • a community • a phenomena • a situation • a program • an outcome 	To describe what is prevalent	Descriptive research

Impact of a program Relationship between stressful living and incidence of heart attacks Impact of technology on employment Impact of maternal and child health services on infant mortality Effectiveness of a marriage counselling service on extent of marital problems Impact of an advertising campaign on sales of a product Impact of incentives on productivity of workers Effectiveness of an immigration program in controlling infectious disease	To establish or explore: • a relationship • an association • an interdependence	To ascertain if there is a relationship	Correlational research

Why does stressful living results in heart attack? How does technology create unemployment/employment? How do maternal and child health services affect infant mortality? Why do some people have a positive attitude towards an issue while others do not? Why does a particular intervention work for some people and not for others? Why do some people use a product while others do not? Why do some people adopt a program while others do not?	To explain: • Why a relationship, Association or interdependence exist • Why a particular event occurs	To explain why the relationship is formed	Explanatory research

Topics in applied research

- Would a change in welfare policy spur an increase in individuals seeking work?
- What changes are necessary to create jobs?
- How does the consumption of oil in the United States affect its economy?
- How would the legalization of some drugs affect various groups within society?
- What type of anti-smoking campaigns can reduce smoking among youth or adults?
- How can obesity be prevented?
- What effect does fast food have on overall health?
- How can social anxiety be overcome?
- How does social media change individual's perception of society and themselves?
- Does marriage prevent certain mental or physical illnesses?
- In what ways can depression be managed without medication?
- Do government enforced regulations help or stigmatize those in "oppressed" groups (such as affirmative action or Title IX in women's sports)?
- Is there a wage gap between men and women in the United States, and if so, why?
- Is multi-tasking helpful or hurtful?

- Are children of working mothers at any long term disadvantage as opposed to children of stay at home mothers?
- What are ways to improve school readiness for children?
- How can graduation rates be improved in urban school environments that are currently not producing as many graduates as their suburban counterparts?

- What can be done to increase the amount of graduating high school students choosing to attend college?
- Is college tuition becoming prohibitive to young adults being successful and able to support themselves?
- Is technology creating a "dumbing down" of individuals?
- How does tobacco use in various forms affect humans?
- How can we turn solid waste into usable energy for use by the people in urban areas?

- The end!
- Thank you