WHAT IS METHODOLOGY ?

Methodology [ˌmɛθəˈdɒlədʒɪ] , -gies is
1) the system of methods and principles used in a particular discipline, in some particular area of study or activity.
2) the branch of philosophy concerned with the science of method and procedure.

WHAT IS RESEARCH ?

Research is "creative and systematic work undertaken to increase the stock of knowledge, including knowledge of humans, culture and society, and the use of this stock of knowledge to devise new applications."

Criteria for Research Problems

Good research problems must meet three criteria (Kerlinger, 1973):

1) First, the research problem should describe the relationship between two or more variables.

2) Second, the research problem should take the form of a question.

3) Third, the research problem must be capable of being tested empirically (i.e., with data derived from direct observation and experimentation).

LITERATURE REVIEW

"Literature reviews are absolutely indispensable when planning a research study because they can help guide the researcher in an appropriate direction by answering several questions related to the topic area.

LITERATURE REVIEW

A. Have other researchers done any work in this topic area?
B. What do the results of their studies suggest?
C. Did previous researchers encounter any unforeseen methodological difficulties of which future researchers should be aware when planning or conducting studies?
D. Does more research need to be conducted on this topic, and if so, in what specific areas?

LITERATURE REVIEW

A thorough literature review should answer these and related questions, thereby helping to set the stage for the research being planned."

WHAT IS METHOD?

Method ['meθəd]
is a particular procedure for accomplishing or approaching something,
especially a systematic or established one.

via Latin from Greek methodos 'pursuit of knowledge', from meta- (expressing development) + hodos 'way'

The Scientific Method

- The development of the scientific method is usually credited to Roger Bacon (c. 1175–1253), a philosopher and scientist from 13th-century England,
- although some argue that the Italian scientist Galileo Galilei played an important role in formulating the scientific method.
- Later contributions to the scientific method were made by the philosopher Rene Descartes.

The Scientific Method

Although some disagreement exists regarding the exact characteristics of the scientific method, most agree that it is characterized by the following elements:

1.• Empirical approach
2.• Observations
3.• Questions
4.• Hypotheses
5.• Experiments
6.• Analyses
7.• Conclusions
8.• Replication

WHAT IS METHOD LIKE?

Distributive Analysis is a method of linguistic research in which the classification of linguistic units and the study of their features are carried out on the basis of the distribution of the units in question in the spoken chain—that is, on the basis of their *combinability* with other units, which are called the *environment*, or context, of the units in question. Distributive analysis was devised by representatives of so-called descriptive linguistics.

The Great Soviet Encyclopedia, 3rd Edition (1970-1979).

WHAT IS HYPOTHESIS?

A hypothesis is an idea which is suggested as a possible explanation for a particular situation or condition, but which has not yet been proved to be correct. [FORMAL]

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WHAT IS HYPOTHESIS?

Hypothesis [haɪˈpɔθəsɪs] (pl. hypotheses [-siːz]) is a supposition or proposed explanation made on the basis of limited evidence as a starting point for further investigation;

Origin: late 16th cent.: via late Latin from Greek hupothesis ‘foundation’, from hupo ‘under’ + thesis (= ‘placing)

What is method description like?

The **distribution** of a unit is the sum total of all its environments.

The environment of a unit may be either “right” or “left”.

There are **three main types of distribution** :

1) contrastive;

2) non-contrastive;

3) complementary.

What is method description like?

The **distributional analysis** is used to fix and study the units of language in relation to their contextual environments, i. e. adjoining elements in the text.
The study is conducted in **two stages.**
At the first stage, the analyzed text is divided into *recurrent segments* consisting of phonemes. These segments are called "**morphs**".
At the second stage, the environmental features of the morphs are established and the corresponding identifications are effected.

What is method description like?

Contrastive and non-contrastive distribution concern identical environments of different morphs.
The morphs are said to be **in contrastive distribution** if *their meanings are different*.

Such morphs constitute *different morphemes* (eg. play-ed, play-ing).

What is method description like?

Contrastive and non-contrastive distribution concern identical environments of different morphs.
The morphs are said to be in **noncontrastive distribution** *if their meaning is the same.*

Such morphs constitute “free alternants”, or “free variants” of the same morpheme (eg. burn-ed, burn-t).

What is method description like?

Complementary distribution concerns *different environments of formally different morphs which are united by the same meaning*.
If two or more morphs have *the same meaning* and the difference in their form is *explained by different environments*, these morphs are said to be in complementary distribution and considered the *allomorphs* of the same morpheme (eg. Desks /-s/, girls /-z/, glasses /-iz/).

What is method description like?

Method application restrictions

The Distributional Analysis is a good example of finding relevant interrelation between linguistic syntagmatic and paradigmatic structures, such as meaning and word structure. The transfer of distribution analysis to other levels or areas of linguistic text processing may be a bit problematic, since real life texts admit (or incur) amphibolic [ˌæm(p)fɪˈbɔlɪk] expressions like *'fat major's wife'* which may mean both that major is fat or his wife is.

WHAT IS RESEARCH ?

Research is "creative and systematic work undertaken to increase the stock of knowledge, including knowledge of humans, culture and society, and the use of this stock of knowledge to devise new applications."

WHAT IS RESEARCH ?

Research [rɪˈsɜːtʃ] is a systematic investigation to establish facts or principles (or to collect information on a subject).

Syn: investigation , experimentation , testing , analysis , fact-finding , fieldwork , examination , scrutiny etc.

To research – исследовать. to carry out investigations into (a subject, problem, etc.)
Syn: investigate , study , enquire into , look into , probe , explore , analyse , examine , scrutinize etc.

WHAT KIND OF RESEARCH ?

	— научно-исследовательская работа (НИР)
	— независимое, оригинальное исследование
	— детальное, обстоятельное исследование
	— трудоёмкое, напряжённое исследование
	— серьёзное, глубокое исследование
	— прикладное исследование

WHAT KIND OF RESEARCH ?

	— научно-исследовательская работа (НИР)
independent / original research	— независимое, оригинальное исследование
detailed / thorough research	— детальное, обстоятельное исследование
	— трудоёмкое, напряжённое исследование
	— серьёзное, глубокое исследование
applied research	— прикладное исследование

WHAT KIND OF RESEARCH ?

research work	**— научно-исследовательская работа (НИР)**
independent / original research	— независимое, оригинальное исследование
detailed / thorough research	— детальное, обстоятельное исследование
	— трудоёмкое, напряжённое исследование
solid research	— серьёзное, глубокое исследование
applied research	— прикладное исследование

WHAT KIND OF RESEARCH ?

research work	**— научно-исследовательская работа (НИР)**
independent / original research	— независимое, оригинальное исследование
detailed / thorough research	— детальное, обстоятельное исследование
laborious / painstaking research	— трудоёмкое, напряжённое исследование
solid research	— серьёзное, глубокое исследование
applied research	— прикладное исследование

WHAT KIND OF RESEARCH ?

	— заниматься научно-исследовательской работой
	– проводить исследования
	– исследовать причины заболевания раком
	— Его исследования принесли плоды.

WHAT KIND OF RESEARCH ?

to be engaged in research	**— заниматься научно-исследовательской работой**
to conduct / do / pursue research	– проводить исследования
to carry out a research into the causes of cancer	– исследовать причины заболевания раком
His researches have been fruitful.	— Его исследования принесли плоды.

ENGLISH RESEARCH COLLOCATIONS

English academic research collocations.
Check yourself!

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https://learningapps.org/display?v=ps26asabt17

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Check yourself!

https://learningapps.org/display?v=ps6as3oo517

WHAT IS METHODOLOGY ?

Methodology [ˌmɛθəˈdɒlədʒɪ] (derived from *method* and *logic*)
is the study of structure, logical organization, methods and means of activity;
The methodology of science is the doctrine of the principles of construction, forms and methods of scientific knowledge.

METHODOLOGY and ACTIVITY

Methodology [ˌmɛθəˈdɒlədʒɪ] is the doctrine of the structure, logical organization, methods and means of **activity**. So Methodology at large forms a necessary component of any activity as the latter becomes the subject of awareness, learning and rationalization.

METHODOLOGY and ACTIVITY

Methodological knowledge acts in the form of both **prescriptions and norms**, which fix the content and sequence of certain activities (normative M.), and **descriptions** of actually performed activities (descriptive M.).

In both cases, the main function of this knowledge is the internal organization and **regulation** of the process of cognition or practical transformation of an object.

METHODOLOGY and ACTIVITY

In modern scientific and methodological discourse, M. is interpreted primarily as M. of scientific knowledge (or research), that is, the doctrine concerning the principles of construction, as well as forms and methods of scientific and cognitive activity.

Methodology of science gives a description of the components of a research study — its object, subject of analysis, research task (or problem), research tools required to solve a given type of problem, and also forms an idea of the sequence of the researcher's progress in the task-solving process.

METHODOLOGY and ACTIVITY

The most important points of application of M. are the problem statement (this is where the most frequent methodological errors occur, leading to the advancement of pseudo-problems or significantly complicating the receipt of the result),

METHODOLOGY and ACTIVITY

… the construction of the subject of research and the construction of a scientific theory, as well as verification of the results obtained in terms of its truth, t. e. conformity to the object of study.

METHODOLOGY and ACTIVITY

Modern philosophical and methodological studies revealed some important mechanisms for the functioning and development of scientific research and knowledge:

METHODOLOGY and ACTIVITY

- laws of succession of the change of scientific theories (the correspondence principle);
- the presence of a “paradigm” of thinking specific to each era of the development of science (i.e., a set of implicitly defined regulative principles);
- methodological features of artificial languages used in science;

METHODOLOGY and ACTIVITY

- specifics of various types of scientific explanation;
- methods of building scientific theories (deductive, hypothetical-deductive, genetic, etc.),
- characteristics of a number of methodological areas of modern cognition (systems approach, structuralism, cybernetic methods, principles of probabilistic thinking etc.).

METHODOLOGY and ACTIVITY

Since the 1950s. in M. science, problems of generating and **changing knowledge systems** begin to occupy a prominent place.
The Austrian-born British logician [lɔ'ʤɪʃ(ə)n] and philosopher K. Sir Karl Popper, (1902-94) tries to explain this process on the basis of the principle of falsification put forward by him, that is, the systematic refutation of existing theories.

METHODOLOGY and ACTIVITY

American investigator of history of science Thomas Samuel Kuhn /kuːn/(1922 –1996) formulates the concept of the development of science through **scientific revolutions**, leading to a radical **change of paradigms** of scientific thinking.

See: Structure of Scientific Revolutions.pdf

(Beware! Circa ['sɜːkə] 210 pp.!)

METHODOLOGY and ACTIVITY

English (I say '**Hungarian**') mathematician and philosopher Imre Lakatos [UK: /ˈlækətɒs/, US: /-toʊs/; [ˈlɒkɒtoʃ ˈimrɛ] (1922 –1974) proposed the idea of the development of science based on the foregrounding, advancement [ədˈvɑːn(t)smənt] and implementation of a certain sequence of research programs.

METHODOLOGY and ACTIVITY

An important aspect of these and other studies is the broad criticism of the **neo-positivis**t ideas about M. science and its subject matter for the narrowness of their initial premises ['premısız]. In this regard, in the works of some Soviet as well as modern Russian and foreign researchers, M.'s concept is developed, based on the principle of activity. The latter one presents M. as a systematic theory of research activity.

METHODOLOGY and ACTIVITY

The development of this concept is accompanied by a criticism of Popper's falsificationism (for one-sided presentation of the process of knowledge development) and Kuhn's concept of SR (for his denial of continuity in the development of knowledge).

METHODOLOGY and ACTIVITY

The special-scientific M., in turn, is divided into several levels:
(1) general scientific methodological concept and direction and (2) M. of individual sciences, methods and techniques of research.
Starting from the 2nd half of the 20th century, the first of these levels (which is far from homogeneous in content) has undergone especially rapid development.

METHODOLOGY and ACTIVITY

The reasons for its emergence and growth are the **universalization of means of knowledge**, facilitated by this generalized formulation of scientific problems, as well as the **desire for synthesis**, which becomes dominant in the thinking style of modern science.

vowel ['vauəl] /

consonant ['kɔn(t)s(ə)nənt]

Kinds of Language Universals

AN ABSOLUTE UNIVERSAL	A STATISTICAL UNIVERSAL
Absolute universals refer to properties found in all languages	statistical universals reflect important trends that are found in a predominant part of the languages of the world, but not necessarily in all.
All languages have vowels and consonants.	Subjects tend strongly to precede objects.

Kinds of Language Universals

A Language Universal Type	An example
AN IMPLICATIONAL UNIVERSAL	If a language has voiced fricatives, it also has unvoiced fricatives, but not necessarily the other way round.
AN NON-IMPLICATIONAL UNIVERSAL	Present or absent in natural languages without reference to any other properties of the given language.

There are such universalist theories that directly describe the broad scope of reality from a certain angle, that is, from the standpoint of a certain methodological principle (such as the concept of the **noosphere**, [ˈnəʊˌsfɪə] for example) or **theoretical cybernetics**); universal conceptual systems (such as the **general system theory** of Ludwig von Bertalanffy), aimed at identifying **universal concepts** and categories of scientific thinking through the analysis of the material of science itself. See: General_System_Theory_1968.pdf

289 p.

The **Activity** is a specifically human form of an active relation to the surrounding world, the contents of which constitute its goal-related expedient change and transformation.
The Activity of human implies a certain opposition of the **subject** and the **object** of Activity. So a person opposes to himself an object of Activity as a material that resists the influence of a person and then must get a new form and properties, turning it into product of human Activity.

Each **Activity** includes:
(a) the goal,
(b) the means,
(c) the result
(d) and the process of Activity itself,
and, therefore, an integral characteristic of Activity is its (e) awareness on part of its subject.

Activity is the real driving force of social progress and the condition of the very existence of society.

As a philosophical principle, the concept of Activity was established within German classical philosophy, when a new concept of personality triumphed in European culture, characterized by rationality, diverse areas of activity and initiative, and the prerequisites were created for considering Activity as the basis and principle of all culture.