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Research Methods:

- The methods used in conducting research
- Is the basis for the drafting of the study
- The elaboration of the scientific method in general

Some aspects in the selection of the research methodology:

- Research Objectives
 - The nature of the problem to be solved
- } dependent types of research

Some aspects of the draft study:

- What approach to use?
- What methods will be used?
- What strategies would most effectively?

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Research Methodology types

Based on the type of research

Some Types of Research:

- Historical research
- Descriptive Research
- research developments
- Case study and Research Field
- Correlational research
- Experimental research
- Action Research

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1. Historical Research

Purpose

To make the reconstruction of the past in a systematic and objective, by collecting, evaluating, verifying, and synthesizing evidence to establish facts and reach a conclusion that a strong

The Characteristics

- The processed data is typically observed data of others (secondary data) so authenticity, ketapatan and data sources need to be considered.
- It is also possible the existence of primary data. If any, should be given priority.
- To check the weight of the data is done with the criticism of Internal and External
- Internal criticism: test the motives, honesty and a limited number of researchers in data
- External criticism: relevance, authenticity and accuracy of data

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1. Historical Research

Basic steps

- Define the problem
- Formulate research objectives and hypotheses (if possible)
- Collect data (primary and secondary)
- Evaluation of data (internal and external criticism)
- Add a report

Example of Historical Research

A study of the practice of "debt bondage" clove farmers in rural Central Java

- To understand the basics in the past the
- Test whether bonded labor system is still relevant in the present
- Testing whether certain social values and solidarity plays important role in rural economic activities

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2. Descriptive Research

Purpose

To make pencandraan / picture of systematic, factual and accurate information on the facts and the properties of an object in a particular research

The Characteristics

- No: hypothesis testing, forecasting, search implications of the relationship between the study variables (correlational)
- Requires data truly representative / representative of the research object
- The sampling process should carefully study

➔ **Descriptive research is often called the Survey Research**

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2. Descriptive Research

Basic Steps

- Define your goals clearly and specifically
- Design methods of approach:
 - What data will be collected? How how it was collected?
 - What tools are used for data collection? Who is the source of the data?
 - Who is in charge of collecting the data? Etc
- collect the data
- Add a report

Example of Descriptive Research

- A study of the need for labor in the computer field in 2000
- Survey of public opinion on the student to assess student attitudes toward curriculum change plan

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3. Development Research

Purpose

To investigate the pattern and perurutan growth or change in an object or phenomenon as a function of time

The Characteristics

- This research requires continuous observation (continuous)
- Can be conducted longitudinally (function of time) as well as cross-sectional

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3. Developments Research

Basic Steps

- Define the problem and formulate goals
- Perform literature review
- Design methods approach
- collect the data
- evaluation of data
- Arrange the evaluation report

Example of Developments Research

- A study of the development of the behavior of children aged 0-10 years
- Studies on the effect of aid on economic development for rural IDT
- Research on the effect of family planning program participation suppression mortality

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4. Case study and Research Field

Purpose

To learn intensively about the background of the current situation and environment of a unit of social interaction: individual, group, institution or community

The Characteristics

- Object of the research is a particular social unit
- Sample a little but a lot of observation variables
- The conclusion is limited to a particular sample unit and can not be generalized to the population level (subjectively inclined)

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4. Case study and Research Field

Basic Steps

- Define objectives to be achieved
- Design methods approach
- collect the data
- Organize data and information into a unified reconstruction
- Arrange the report and discuss the results

Examples of Case Studies and Field Research

- Field studies on the culture of fishermen in coastal areas
- Case studies of the lives of street children in the city of Semarang
- Research on the typology of street vendors around the intersection of five

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5. Correlational research

Purpose

To determine the relationship (correlation) between the variables study

The Characteristics

- Suitable for use if the variables studied complex and can not be studied with experimental methods (can not be manipulated / controlled)
- Allows measurement of multiple variables simultaneously and mutual relation in realistic circumstances
- The output of this study is the level / high-low relationship and not the presence or absence of a causal relationship of mutual
- The pattern of relationships often uncertain and vague
- Often incorporate a variety of data indiscriminately (forced)
- Can be used to predict certain variables based on independent variables

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5. Correlational research

Basic Steps

- Define the problem
- Perform literature review
- Design how to approach
- collect the data
- Data analysis and interpretation for
- Compose reports

Example of correlational research

- The study analyzes the factors that influence students' academic achievement
- The relationship between college entrance test scores with grade point
Forecasting demand of goods based on the level of prices of goods

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6. Experimental research

Purpose

To investigate the causal relationship by imposing one or more experimental groups a condition / treatment and compared with the experimental group were not subjected to the condition / treatment

Characteristics

- Demanding variable settings and conditions / experimental treatments
- Using a control group and an experimental group
- Using tertutama hypotheses about the effects of differences in treatment

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6. Experimental research

Basic Steps

- Do a survey of the literature / book study
- Identify and define the problem
- Formulate hypotheses based on the literature study
- Define basic notions and main variables
- Arrange study design
- Conduct experiments
- Organize the data experimental results
- Data analysis and hypothesis testing done
- Interpretation of the results of the analysis, discuss and organize reports

Example of Experimental Research

- A fertilizer dose effect of the increase in rice yields

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7. Action Research

Purpose

To develop new skills, new approaches, or new product knowledge and to solve problems with direct application in the actual world (field)

Characteristics

- Practical and directly relevant to the actual situation on the ground (empirical)
- Provides a framework / systematics regularly to solve problems and the development of new and better
- Flexible and adaptive, allowing changes during the study period (innovative)
- Not always demands hypotheses and control variables

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7. Action Research

Basic Steps

- Define the problem and set goals
- Do a study / library research
- Formulate hypotheses or strategies specific approaches
- Arrange describe the study design and procedures as well as the condition
- Define criteria for evaluation and measurement techniques for feedback
- Conduct experiments
- Data analysis, evaluation and stacking reports

Example of Action Research

- Studies in the field of use of computer technology
- Research on the prevention of traffic accidents for the driver (training / education driver)
- Dropout empowering the entrepreneurial

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Research in the Field of Computer Science

➔ mostly in the form of :

- development research
- experimental research
- action research

➔ Methodology enables the development of new, more specific (particularly in engineering) :

- Information Systems Development Methodology
- Software Development Methodologies
- Hardware Development Methodology
- Etc.

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Conclusion.

Research Methods:

- ✓ Describe the stages in the research process in order to solve the problem of the study of the early planning to the achievement of the research
- ✓ There is no one standard format of the research methodology, but any research methodology can not be separated from the frame of the scientific method research methodology.
- ✓ The selection depends on the type of research conducted
- ✓ Developments in science allow the emergence of new research methodologies (dynamic)

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Any questions ... ?

Assignment :

1. Describe the criteria used as a basis for selecting a theme and a good research topic?
2. Explain what are the things that should be contained in a writing background research?
3. What is a problem, and where we can find the source of the problem?
4. What things should be considered in identifying, suggests constraints and formulate the research problem?
5. Anything listed in the goals and purpose of the study?
6. How do I choose the right theory and how to create the right framework?
7. How do I formulate appropriate hypotheses?
8. How do I devise a method of analysis and hypothesis testing are true?