CHAPTER IV
STEP BY STEP OF RESEARCH

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General view:

- The selection of themes, topics and research titles
- Identify the objective needs (background) research
- Identification, selection and formulation of the problem
- Library Studies / Assessing Theory
- formulation of hypotheses
- Identification of variables and data research
- Selection of the data collection tool
- The design of the data processing
- determination of sampling
- data collection
- Processing and data analysis
- conclusion
- Preparation of research reports

➔ ***The elaboration of the scientific method in applying inductive and deductive mindset***

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4.1 The selection of themes, topics and Research Title

Research Themes required to direct the scope and field of study that will be studied by researchers (related to science)
Research Topics related to the discussion of the line (be specific)

Basic of Selection Research Themes and Topics :

- Attraction for researchers
- There is the ability of weeks to implement (knowledge, resources, physical)
- Data can be observed (including the availability of the data collection tool)
- With regard to the needs of the community (related to solving practical problems)

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Research Title intended to clarify and sharpen the scope and field of study of the themes and topics of research in making research titles :

- Short, clear and logical
- Looks scope and methods of discussion
- Looks scope of the research object (population / sample)
- In connection with the theme and topic of research

Example:

- Library Information System STMIK Dian Nuswantoro
- Designing Software To Detect CPU Damage
- The E-Commerce Transaction For Sale in PT "XYZ"
- Accessing Files Software Application To MP3

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4.2 Objective Identification Requirements (Background) Research

➔ Provide a description / overview of the background to the research done

In describing the need for objective / background of this study need to be presented :

- Facts / conditions / problems that exist or occur at this time
- What is the importance of research to be conducted
- How it relates to current needs and demands and the demands of development in the future
- Strategic matters that will be achieved by the study relating to

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4.3 Identification, Selection and Problem Formulation

Definition of problem :

- A perceived difficulty, and require concrete solutions
- A gap between what is supposed to be with what is in reality, or between what is necessary with what is available or the expectation with reality and so on.

A problem does not have to require / cause a study conducted by the research but because of the problem. So someone who will do the research first must determine : ***what is the problem?***

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different of problem and the fact

Example

Fact ➔ leads to the need for objective / background data file on a computer virus affected many

Problem ➔ leads to the attempt to split How do we clean the virus in the data file?

This problem requires research to find a solution

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Problems Identification

- Attempts to do a search and data collection issues that will be discussed
- Search problem can be done from the sources problem :
    1. Reading
    2. At a glance observations / facts on the ground
    3. Personal Experience
    4. Scientific Meeting: Seminar, discussions, workshops etc.
    5. Statement of Authority Holder
    6. Personal Intuitive Feelings

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Election Issues

Once the problems are identified, is not a guarantee that all the problems feasible and appropriate for the study. So that needs to be selected one or several most problems well and deserves to be investigated. Consideration of the selection problem can be done by 2-way :

1. From The Direction of the Problems

Consideration of eligibility based on the direction or angle objective problem or research value. Do the research to contribute to the development and application of science and technology or practical problem solving?

2. From The direction of Research

Considerations based on the feasibility and suitability of researchers regarding the feasibility of cost, time, facilities, scientific capabilities

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Problem Formulation

The problem needs to be formulated in order to make the problem clear and not cause hesitation or different interpretations because the issue will be used as the basis for: filing theories and hypotheses, data collection, selection of methods of analysis and conclusion

Techniques to formulate the problem :

- Formulated in the form of a question sentence
- Brief, clear and concise
- Giving instructions possibility of data collection and the method of solution

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Good Problems

- Have value and feasibility studies in terms of benefit / contribution
- Feasible / can be solved (concrete) where there is data and methods of solving them
- Attractive to researchers who supported the ability of science
- On certain specific areas (clear scope discussion)
- Useful to develop a theory

Once again: a different problem with the fact

Background:

Manual system generated a lot of sales administration errors and slow performance

Problem Formulation :

How to design a computerized system that can handle the administration of the sale with a good, effective and efficient?

Assignment

1. What are the elements in the design of the study?
2. How exactly are the stages in the implementation process of research?
3. Why do we have to make a draft first before doing research?