

Implementation of Problem Formulation Management in Improving the Quality of Research in Higher Education

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Abstract

Basically in conducting a study there are problems that can be used as a means to achieve a goal or goal in the study. Everyone who conducts research must have their own method, concept, or method in formulating the problem that is the object of the research. In this paper will explain the techniques or ways that can be done in relation to formulating problems in research including determining a topic to be discussed in research, making background problems, explaining problem identification, limiting the scope of research, determining problems that are worthy of research, making questions in research, and determine the goals, benefits, and uses of the research. With the concept of planning and mature thinking to formulate and determine the formulation of the problem, it is expected that the research that will be conducted will be focused and directed so that it does not extend to the discussion that is not the topic of his research. With the formulation of this problem also the reader becomes aware of the results and objectives to be conveyed in a study. Therefore in this study we will discuss the steps or ways in preparing the formulation of a problem that is good and right in order to facilitate the implementation of a research activity.

Keywords: Research, Problem Formulation, Thought Results.

1. Introduction

In the current era of education research is important in finding and identifying new findings or concepts to be applied to develop material in education [1]. Research can also be used as a tool in perfecting previous findings that have been done by other researchers. In the research carried out there must be ethics that must be possessed by each researcher [2]. One of the ethics in conducting research is honesty, applies objectively to the results of his research, appreciation of Intellectual Property Rights (IPR), and so forth. In conducting their research, researchers are always faced with three main problems including time, cost and energy. On the basis of all three, it is endeavored to set limits on his research [3]. The limit is intended so that the discussion in the study does not extend but focuses on the object to be studied. Therefore it requires good thinking management and mature concepts in starting a research to achieve results and objectives according to the estimated time.

Many important factors must be determined when a person or group of people will begin a study. One factor that must be prepared is to determine the problem statement. Formulation of the problem is an important factor in building a research. With the formulation of this problem research management has become more focused and directed, including in determining the types of data needed according to the research conducted [4]. So from here it is the importance of the researchers to formulate the problem first. Errors in techniques or ways of formulating problems can produce extensive research instruments or discussions. The research instrument can be the variables to be studied. The more variables that will be examined, the greater the costs incurred, the longer the research time, and the need for a lot of energy especially if the method of data collection is by applying direct observation such as interviews [5]. Besides that

the quality of research results can be determined depending on the formulation of the problem. The results of the study can be said to be good if the planned problem formulation is well arranged. On the contrary the results of the research may not be optimal or even make it worse if the management of the formulation of the problem in it is not well planned. The formulation of the problem of this research can be likened to the first impression in conducting a study [6]. Because through this research formulation the readers will know what will be delivered or discussed in this study and through the formulation of this problem the readers will assess whether the research conducted is interesting or not.

The formulation of the problem can be said to be the most important and main stage in the research activity. Without the formulation of the problem a research activity will be futile and will not even produce any results [7]. The formulation of the problem or commonly interpreted by research problem is a formula that questions a phenomenon, both in its position as an independent phenomenon, and in its position as a phenomenon that is interrelated between phenomena with one another, both as a cause and as a result [8] Due to the stages of the formulation of this problem it is very important in relation to conducting a study to bring up an assumption or thought that states that the management of activities in formulating this problem is a half activity of the research itself. Good management of researchers in determining and formulating the problem can be used as a determinant of direction, guidance, or focus of the research itself. Through the formulation of the problem also the researcher becomes aware of how relevant data is and what data is not relevant to his research activities.

At this writing, it explains in detail and in detail the steps or ways that can be taken in conducting the management of problem formulation in research [9]. The material to be discussed at this writing includes discussing the selection of a topic before conducting research, making background problems according to the research topic, explaining and making identification of problems based on the chosen research topic, explaining the importance of determining boundaries and formulating predetermined problems , and determine the goals, benefits, usefulness of the research, make and compile questions in the study, and determine the problems that are worthy of research. Of course the steps or methods above require management concepts and management of mature thinking from the researchers before plunging directly into their research or research so that the formulation of the resulting problems can be arranged well so that the research results will be maximally as expected.

2. Research Methods

Basically this writing explains and provides an explanation of the ways or steps that can be used as guidelines for researchers in determining the formulation of the problem before conducting research. determining the method that will be used as an observation material can improve good management in the research process.

At this writing the literature study method is used or known as the literature review in the activity of collecting data. Where the literature review method is carried out by collecting material in the form of theories of knowledge obtained from previous relevant writing or research. The following are 6 (six) lists of literature reviews used in this paper as further reference material.

1. Research conducted by Martono in 2010 explained that many management alternatives can be chosen to be able to conduct research, especially in terms of topic selection and research problems. Choosing research topics and problems is not easy. The selection of research topics cannot be done carelessly. Many things can be taken into consideration in determining research topics, one of which is the problem of time and funds. Many research methods can be chosen, but each research method has strengths and weaknesses. Many people, especially students, think that quantitative research methods are very difficult. Even the interest of students to use quantitative research methods tends to decrease. Students choose more qualitative methods because they are considered easier and faster. These things are also management factors that support the writing of the problem statement later. Research problems are the heart of the research process. If there are no problems, there will be no research. Therefore there are several things that must be considered in the process of formulating problems in research, one

of which is primarily the determination and selection of topics to be used as material in the study. This is where management planning and the concept of mature thinking from researchers are needed [10].

2. Research conducted by Tina Sri Sumartini in 2018 entitled "Increasing the Ability of Students to Solve Mathematical Problems through Problem-Based Learning". In the research he has done, it discusses research on mathematical problem solving abilities among students who have not been as expected. In this study also said that one of the learning to improve mathematical problem solving skills is to implement a problem-based learning management. The purpose of this research itself is to find out the improvement of students' mathematical problem solving abilities as a result of applied problem-based learning management. Based on the results of the analysis of this study, it was concluded that an increase in mathematical problem solving abilities of students who received problem-based learning was better than students who obtained conventional learning management methods. In addition, mistakes made by students when working on several sets of questions related to mathematical problem solving abilities are errors that are caused by carelessness or lack of precision, error in transforming information, process skill errors and errors in understanding questions [11].

3. Research conducted by Indri Felani, Tsara Nabila Ramdhani and Heris Hendriana in 2018 entitled "The Ability to Identify and Formulate Problems in Building a Flat and Interest in Learning for Middle School Students". In his research he discussed the need to develop the ability to formulate and solve mathematical problems for a student. In this study also explained the indicators of mathematical problem solving which include (1) identifying elements that are known, asked, and the adequacy of the necessary elements (2) formulating mathematical problems or developing mathematical models (3) applying strategies to solve everyday problems (4) explain or interpret the results according to the initial problem (5) use mathematics meaningfully. Skills to understand problems, make mathematical models, solve problems and interpret solutions are efforts to improve problem-solving skills. Therefore, it is necessary to have a well-planned mathematical learning management so that the learning process in absorbing knowledge in each student can be channeled to the maximum [12].

4. Research conducted by Wahyu Hidayat and Ratna Sariningsih in 2018 entitled "Mathematical Problem Solving Ability and Adversity Quotient of Middle School Students Through Open Ended Learning". In their research they discussed about improving mathematical problem solving skills in open ended learning management. Where explained that in mathematics learning problem solving is the core of learning which is the basic ability in the learning process. To improve problem solving skills need to be developed skills to understand problems, make mathematical models, solve problems and interpret solutions. Problem solving contains 4 (four) steps to solve, including understanding the problem, planning problems, resolving problems according to plan and re-checking all steps taken. One stage to the next stage in problem solving supports each other to produce problem solving contained in mathematical questions. In the learning process, a good management mindset and concept is needed to produce solutions to problems [13].

5. Research conducted by Fatia Fatimah in 2012 entitled "Mathematical Communication Ability and Problem Solving Through Problem Based Learning". In this study discuss the method of problem based learning which is more suitable to be applied to improve problem solving skills. Higher education as a forum for the last formal education is expected to facilitate the development of mathematical communication management skills and student problem solving. One model of problem solving in this study is Problem Based Learning (PBL) which has a characteristic that is always started and centered on the problem. In Problem Based Learning (PBL) students can work in small groups and must identify what they know and what they do not know and must learn a lot to solve a problem. Indicators in the process of formulation and problem solving include the ability to write problems using their own language so that it is easier to understand, the ability to develop solutions related to problems, and the ability to review solutions to the answers to these problems [14].

6. Research conducted by Testiana Deni Wijayatiningsih and Enny Dwi Lestariningsih in 2018 entitled "Problem Based Learning: Supporting Active Responding in Writing". In this study it was

concluded that the application of the Problem Based Learning (PBL) method was able to encourage students to be creative in writing and improve students' critical thinking in solving their problems. They tend to have a big effort to finish writing on their final project or final project. This can be seen from the results of the average students who received the learning questionnaire 69.8% which meant there was a great motivation and active response from the students to write and complete their research project as a final assignment [15].

From the six literature reviews, conclusions can be drawn that there are several important factors that must be known in an effort to formulate and solve a problem including understanding the problem, planning the problem, solving the problem according to plan and checking again on all steps taken. One stage to the next in problem solving supports each other to produce problem solving.

3. 3. Results and Analysis

At this writing will discuss the overall management planning and concepts that must be prepared in conducting a study. Things that will be discussed include the selection of a topic before conducting research, making the background of the problem in accordance with the research topic, explaining and making identification of problems based on the chosen research topic, explaining the importance of determining boundaries and formulating predetermined problems, determining goals, benefits, usefulness of research, making research questions and determining problems that deserve to be studied.

A. Selecting a Research Topic

Choosing research topics is a most important decision, which must be done in conducting research activities. Counting 12 (twelve) management issues to be taken into consideration when choosing a research or research topic include how many choices they have, what is the motivation to do this research, regulations and expectations, subjects or related fields of study, examples of research projects previously, topic size, time available, research costs, available resources, need for support or support, access to issues and finally the method for conducting research. Choosing a topic and formulating the focus of a question in the research process is the initial stage that a researcher must do before starting to do a series of subsequent research activities [16]. Without being preceded by the determination of the topic and the focus of questions that are clear, detailed and worthy of investigation, the next stages of the research process will undoubtedly not develop wildly, merely follow the development of data in the field, but do not answer the topic and focus of the research

In any type of research, determining research problems is important and central. It is important because research that tries to examine any social problem is not possible without the problem being investigated, even though it is as tentative as any problem that is formulated [17]. Central said because almost all stages or research activities such as background problems, research objectives, operationalization of concepts, preparation of questionnaires or interview guides, conclusions, suggestions and so on will all always lead to problems that have been formulated first. In research, the role of the problem is like a compass that guides the direction of work of a researcher in the process of compiling research instruments, digging data, conducting analysis and drawing conclusions.

B. Making Background Problems

The background of this problem is intended to explain why the problem under study is important in terms of the profession of researchers, the development of science and the interests of development. What needs to be presented in the background of the problem is what makes the researcher feel anxious and restless if the problem is not examined [18]. In the background of the problem, it is better to reveal the symptoms of the gaps found in the field as a rationale for raising problems. It's good to say what losses will be suffered if the problem is left inaccurate and what benefits will be obtained, if the problem is not examined. It also needs to be

explained clearly about the position of the problem to be investigated within the area of study that is occupied by the researcher concerned.

C. Identification of Problems

Identifying problems is not an easy thing and may even be considered as the most difficult job in a research process. Identifying research problems not only lists a number of problems, but this activity is more than that because the chosen problem should have significance to solve. Identification of problems generally detects, tracks, explains aspects of problems that arise and relates from the research title or to the problems or variables to be examined. The results of the identification can be raised by several interrelated problems with each other.

D. Limiting Scope

At this stage, mentioning what is the object of research to be studied or just mentioning general topics, among researchers is not too difficult. Research social problems can be sought through various methods including avoiding knowledge or experience of oneself or others, as well as from published scientific works. As long as researchers are diligent in reading mass media, researchers will never drought ideas to determine the general topic of research. News such as corruption cases that occurred in the government bureaucracy in the era of regional autonomy, poverty of coastal villages, irregularities that occurred in the implementation of various credit assistance programs to the community, rampant cases of strikes or land conflicts in the city, the lives of refugee children, and various things that exposed to the press, are a number of topics that can easily be chosen as a general topic of research. The problem now is how to limit the scope, determine the focus and formulate it in the form of questions that make scientific conceptions that can be accounted for. In each study, determining the scope is one important step that must be done. If this is not done, researchers will most likely always be tempted to continue to explore the actual data that are less related to the objectives and core problems of the research [19]. By determining the scope, research management activities will not widen and wander about without control, to then lose focus.

E. Problem Formulation

Problem formulation is a different matter with the problem. If the problem is a gap between what is expected and what is happening, then the formulation of the problem is a question that will be sought by the data collection [20]. However, there is a close relationship between the problem and the formulation of the problem, because each formulation of the research problem must be based on the problem.

F. Problems That Are Worth Researching

In various studies, it is often the case that the selection of the problems studied is based on the area of interest and normative impartiality of the researcher concerned. In choosing and formulating problems, the factors that usually influence the choice of problems and approaches that are considered by a researcher are not necessarily the paradigms and values adopted by the researcher concerned [21]. The definition of paradigm here is a perspective that is used by a person or group of people in looking at a particular social phenomenon, so that based on the paradigm people or a group of people can interpret these symptoms. In examining a symptom, a researcher does not see a symptom then interprets the symptoms based on his knowledge and experience, but sees the symptoms that have been interpreted based on his knowledge and experience.

A researcher who is interested and adheres to a structural approach to conflict, for example, will tend to choose the topic of research regarding the suffering and snares of poverty experienced by the people or marginal people in general, as well as theories or approaches that

are used as reference for analysis. On the other hand, a researcher who believes in and attends much to the truth of a functional structural approach will tend to choose research topics such as the problem of harmony or social integration, the functions of poverty, and so on. Logically, a researcher who chooses a topic in accordance with his interests and bias will certainly be more passionate in carrying out his research work and most likely the research process will be more smoothly because he is very masterful in topics and theories relating to the topic being studied.

In choosing a research topic, a researcher should not do it by liking it purely according to its subjective tastes or just considering management of its scientific aspects [22]. But more than that, the research topic chosen must have research value. The purpose of the research value is that the research problem must be quite important or even very urgent to be studied.

G. Questions in Research

In research, when a researcher has set the topic and focus of research, the next step that must be done is to formulate a question about the problem that the answer is to be found. Of course, the selection and formulation of questions about one or a number of these problems need to be supported by a basis for reason, namely a statement that explains the reason why the researcher wants to solve the problem. By knowing consciously the reason and basis for choosing a particular question, it is expected that when the researcher has to describe his main problems in the form of more specific questions, too serious obstacles will not be encountered. The question in a study is not just any question. As mentioned earlier that the name of the question in scientific research must at least contain management concepts or terminology in the field of research under study which is also a key word.

H. Research Objectives

Objectives in the context of management of research proposal preparation are not goals in terms of the importance of what the proposal is made for example as an initial requirement for thesis writing, thesis, or dissertation but are related to what problems will be examined. So the research objectives must be in line and synchronous with the research problems that have been formulated in the form of a problem statement. In presenting the purpose of the study, it should not be stated in the form of questions but must be in the form of a statement. The research objectives must be specific, in the sense that they are in line with the problem statement. In its application, you can choose one of the versions that best fits the provisions that apply in the management guidelines for the preparation of scientific works issued by the faculty or university where you study.

The purpose of the study is the desires of researchers for the results of the study by presenting indicators of what they want to find in the study, especially those related to the research variables [23]. Examples: 1. This study aims to get an empirical picture of the nature (lecturer personality) with student learning motivation in the teaching and learning process, 2. Student learning motivation, 3. How big is the relationship between the nature (lecturer personality) and learning motivation in the student

I. Benefits and Uses of Research

So far the word benefits and uses have been used randomly in a number of universities, both public and private, for the same purpose in the context of the preparation of research proposals. The benefits of research are generally chosen into 2 (two) categories namely theoretical or academic and practical or fragmented[24]. Academic or theoretical benefits related to certain contributions from conducting research on the development of theory and science and the academic world. Theoretical developments relate to the theories used in research, the development of science related to the fields or disciplines studied and the development of the academic world related to the dynamics of academic life[25]. While the practical benefits relate to the practical contributions provided by research providers to the objects of research both individuals, groups, and organizations. The practical contribution must be related to the field of study under study.

The usefulness of research is the impact of achieving goals. If the purpose of the research can be achieved and the formulation of the problem can be answered accurately, then what are the uses of the research. The usefulness of research is to explain the benefits of the research itself.

4. Conclusion

There are 12 (twelve) management issues to consider when choosing a research topic, namely (1) how many choices you have, (2) your motivation, (3) regulation and expectations, (4) your subject or field of study, (5)) examples of previous research projects, (6) your topic size, (7) your time available, (8) research costs, (9) your available resources, (10) your need for support, (11) access to issues, and (12) methods for conducting research.

The problem is the gap between what is expected and what happens, then the formulation of the problem is a question that will be sought by the answer through data collection. Problems that are worthy of being researched or not are (1) the problem to be examined really has its own value, both in terms of the issues selected, the specification of the problem being studied, the scarcity of the topic of study, and its theoretical and pragmatic contribution to development. (2) Problems formulated should be up to date, have original values and as far as possible should avoid duplication of research topics. (3) Problems formulated should be tested empirically through research activities in the field.

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