Analysis of Application Requirements for Administrative Management to The Web Based on Informatics and Computer Engineering Education Study Programs, Makassar State University

**Abstract.** The study aims to produce a document analyzing the needs of administrative management applications in Information and Computer Engineering Education (PTIK) Study Program Makassar State University. This research is the beginning of the process of developing an administrative governance system in the PTIK study program at Makassar State University (UNM). The research was carried out at Computer Laboratory of the Department of Electrical Engineering Education with student and study program manager as the object of analisis. The development model used in this research is Research and Development. The Development Procedure is ADDIE. But in this research focused on needs analysis. The method in the needs analysis used is the method of survey and documentation in the scope of the study program. Needs analysis refers to the application requirements that will be applied to the PTIK study program. The results of the needs analysis show that the administration and governance process of PTIK requires an application with a score of 83.33% with a total of 30 student respondents and 12 lecturers and education staff. Thus being able to approve web-based governance applications in PTIK is needed.

1. Introduction

Along with the development of science and technology especially Information Technology (IT) which is increasingly rapid, the need for IT technology in the teaching and learning process. One effort to improve the quality of the teaching and learning process in an educational institution is to determine the governance and administration of good and quality education including the quality of educational services provided to students. In order for this to be achieved, educational institutions including informatics engineering education study programs must have good governance and academic service management. This is intended to improve the quality of the implementation of academic education from a study program.

The Information and Computer Engineering Education Program (PTIK), is a computer study program whose focus is to give birth to educators in the computer field. PTIK graduates are best suited to become ICT subject teachers (informatics and computer engineering) in schools, especially SMP/SMK/SMA. Including staff instructors or trainers for various fields surrounding computer science. The Study Program of Informatics Engineering (PTIK) Makassar State University is one of the study programs within the Faculty of Engineering, Makassar State University. (Renstra PTIK; 2009).

The efforts made by the PTIK Study Program in order to achieve the objectives are carried out in a comprehensive manner from 3 aspects of the tridarma of higher education. Improvement of facilities and infrastructure for academic support that must be carried out by a study program including improving the quality of services provided. To improve service quality, the use of IT technology is very important, including the use of applications as an academic support tool.

The application in question is a software application. The application is one part of a computer system on a macro basis. Software applications take advantage of the computer's ability to perform a specific task designed by the developer. Software applications can integrate various facilities that are owned by computers to do a particular task. There are many applications that have been created by developers working on human tasks. Applications in a package have similarities making it easier for users to use them. Therefore this research was conducted to conduct a feasibility study in developing the application of governance in Informatics Engineering and Computer Education study programs as one of the efforts to improve the management of all academic activities within the scope of the PTIK study program.

Before building this software application a needs analysis study was conducted. Need analysis is a study activity to determine the needs that must be met on a product in this research in the form of an application. The results of this analysis must be carried out, measured and tested related to what must be done (McConnel; 1996). Need analysis is the process of finding, correcting, modeling and grouping. Needs analysis can also be interpreted as an effort to gather information about what must be done to fulfill a certain interest, the process of needs analysis includes several steps, namely identification of problems, evaluation, modeling, specifications and review of the needs of a system.

Therefore this research was conducted to conduct a feasibility study in developing the application of governance in Informatics Engineering and Computer Education study programs as one of the efforts to improve the management of all academic activities within the scope of the PTIK study program.

1. Research Purposes

The objective achieved in this study was to find out the need for developing a computer-assisted PTIK Study Program application in the PTIK study program at the Makassar State University. The benefits obtained from this study are: (1) the development of computer-assisted PTIK Study Program management applications at the PTIK Makassar State University study program can be more directed; (2) assisting researchers in developing computer-assisted PTI Study Program management applications; (3) the results of this study become one of the contributing ideas for improving the quality of study programs

1. Urgency of Research

The Study Program is a unified learning plan as a guideline for the implementation of academic and/or professional education held on the basis of a curriculum and is intended so that students can master the knowledge, skills, and attitudes in accordance with the curriculum objectives. Improvement of facilities and infrastructure for academic support that must be carried out by a study program including improving the quality of services provided. To improve service quality, the use of IT technology is very important, including the use of applications as an academic support tool. Before developing the application, a preliminary study is conducted in the form of a needs analysis. Needs analysis is very important so that research product development can be more directed.

1. Literature Review

4.1. *Study program as a unit in higher education*

The study program is the unity of the learning plan as a guideline for the implementation of academic or professional education held on the basis of a curriculum and is intended so that students can master the knowledge, skills, and attitudes in accordance with the curriculum objectives. The Information and Computer Engineering Education Program (PTIK), is a computer department whose focus is to give birth to educators in the computer field. PTIK graduates are best suited to become ICT subject teachers (Informatics and computer engineering) in schools, especially SMP / SMK / SMA. Including staff instructors or trainers for various fields surrounding computer science. The Study Program of Informatics Engineering Education (PTIK Study Program) Makassar State University is one of the study programs within the Faculty of Engineering, Makassar State University. The main competency prepared for graduates of this Study Program is to become teachers (teachers) in the field of informatics and computer engineering. In addition to the main competence, students in this study program are also prepared with a set of additional competencies, including being practitioners and technicians in the field of informatics and computers. Of course all of this is through good management or governance.

The implementation of good governance will bring positive changes to the study program, including: (1) being able to give space to outside parties, namely the community, so that they can play an optimal role so as to create synergies between educational institutions and their stakeholders; (2) the application of good governance provides values, such as the value of effectiveness, efficiency, and responsiveness, which encourages educational institutions to be more effective in working without neglecting the orientation of the education needs of customers; (3) good governance provides a clean condition of corruption that is oriented to the public interest

*4.2. Computer-assisted governance application*

The use of computers in the world of education becomes more complex with the development of increasingly sophisticated and more complex computer technology because audio, video and communication media become integrated. There are several applications that can be developed in managing a computer-assisted educational institution.

*4.3. Software Requirements Analysis*

The requirement analysis stage is the stage of communication between the developer and end-user. This stage of system development gets responses from users so that applications can be useful properly. Various methods used in analyzing software requirements. These methods among others are interviews, questionnaires, observation, procedure analysis, and document surveys. In analyzing the requirements of PTIK administration administration applications, questionnaires and surveys were used.

1. Research Methods
   1. Types of research

The analysis of the needs of the Web-based Information and Computer Engineering Education Study Program of Makassar-based Makassar State University is a type of survey research

* 1. Data Sources and Data Collection Techniques

To capture various types of information from various sources including lecturers and administrative staff in PTIK study programs. The data collection techniques are as follows:

* + 1. Interview

This interview technique is used to get information from users regarding the development of study program governance applications. In addition, department managers are interviewed to obtain information about this system in general

* + 1. Questionnaire

This documentation method is used to obtain data and information about the study program management model.

* 1. Data analysis technique

The data analysis technique used is descriptive analysis that describes the results of the survey and questionnaire from the respondents.

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**Acknowledgments**

Acknowledgement go to the Rector of Makassar State University, Dean of the Faculty of Engineering UNM, lecturers, academic staff, and research supporting teams. Our thanks also go to all the National Education Convention Committees (KONASPI 2019) and the Rector of the State University of Padang and all of their staff including the editorial team who have reviewed and reviewed this article. Hopefully Indonesian education can be more advanced.