
**WEBSITE-BASED ACCREDITATION INFORMATION SYSTEM AS AN
IMPROVEMENT OF ACCREDITATION DATA SERVICE QUALITY**

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Abstract

This study aims to build an accreditation information system model following the needs of accredited data users and as a manifestation of effective and efficient data management. The scope of this research is to examine the problems that occur in the implementation of accreditation at the Faculty of Economics and Business, Jenderal Soedirman University, as well as to analyze the needs of users of the accreditation information system as a basis for building a website-based accreditation information system model according to user needs. The effectiveness and efficiency of accreditation data services is the main objective of this study. The approach in this study uses a qualitative approach in exploring needs through observation and interviews and using the waterfall model in system development. The findings in this study are that there are still many shortcomings in the management of accreditation data, including data management, data input, data quality, and personnel management. These findings form the basis for the development of website-based accreditation data management, which includes data collection, data storage, and data processing into reports.

Keywords: data management, accreditation, information systems

1. Introduction

Information system has become an essential factor in improving the service quality while also saving an institution. The computerization of the service information system is a correct solution to solve the data management problem. Economic and Business Faculty of Jenderal Soedirman University is a work unit that contains various academic and non-academic activities that supports the accomplishment of the established vision and mission. One of the Economic and Business Faculty aims is that all of the study programs are accredited as A grade. Therefore,

various means have been conducted to reach that goal. Economic and Business Faculty keeps trying to improve the process and the facility of data providing so that the excellent quality of data services can be achieved.

In essence, accreditation is an evaluation process on a public institution that is aimed so that society can get a standardized quality from the service given (Wirawan, 2012). In Higher Education, evaluators from National Accreditation Body for Higher Education (Badan Akreditasi Nasional Perguruan Tinggi-BAN-PT) conduct accreditation evaluations. *Accreditation* is a process that involves the human resources aspect and data aspect and is a continuous process. Data management and provider staff, data managers, are the elements that support the success of the accreditation process.

Problems that arise from the accreditation process are diverse, from data that is not well-collected, the staff turnover that handles the data source of accreditation, and the changing standard of BAN-PT in every particular period. Problems in the accreditation process are also presented in the research by Indrayanto et al. (2020), where he found that the data necessary for accreditation activities was not inputted periodically by the major/study program's manager, so that it needed to be searched when the accreditation is taking place. Many documents in the study programs and majors are not well-managed, so they are hard to find again when necessary.

The problems above are not only in the Economic and Business faculty but also in almost all of the study programs that had undergone the account. The efforts in solving the data providing and data saving problems so that the data can be easily accessible by the demanding party easily and quickly are by accreditation information system based-data service. A well-organized data management can be one of the determining factors of the success of the accreditation. According to Jogiyanto (2005), data management is a form of information resources management that consists of, first, the process of data collection/gathering and data recording into the functions of the document as the input for the system. Second, the process of the safekeeping of the information resources into a document file. Third, maintaining the new data addition and data alteration process so that the information resources can still be up to date. Fourth, organize the data arrangement process in such a way to be able to fulfill the information needed by the user.

This research is aimed to build an accreditation information system model that is suitable to the needs of the user of accreditation data and as the materialization of effective and efficient data management. The scope of this research is to examine the problems that happened during the execution of accreditation in Economics and Business faculty and to analyze the needs of the accreditation information system user that will be built in which will be used later as the foundation for building the website-based accreditation information system that fulfills the user needs. The effectiveness and efficiency of the accreditation data service is the primary purpose of this research.

2. Literature Study

Accreditation

Accreditation of Study Program and University in clause 11 that accreditation is the assessment activity to determine the worthiness of a Study Program and University. This accreditation

activity is aimed to 1) Determine the worth of Study Program and University based on the criteria that refer to The National Standard for Higher Education (Standar Nasional Pendidikan Tinggi - SNPT); and 2) To guarantee the quality of a Study Program and University externally, whether in academic or non-academic fields, to protect the interest of the student and the society. Government, in this case the Ministry build a BAN-PT. BAN-PT is a non-structural board/agency formed by the government, which is the Ministry to conduct and develop the accreditation of college independently and is responsible to the Minister.

Accreditation has the principles of independence, accuracy, objective, transparency, and accountability. The accreditation policy is performed on the Study Program and University/College based on the interaction among the standards in the SNPT. SNPT is the standard unit that involves the National Standard of Education (SNP), the research standard, and community service standards. Usually, SNPT established by every University includes the standard in academic and non-academic fields that exceeds the National Standard for Higher Education (SNPT). The instrument of accreditation that is established by Peraturan Menteri Riset dan Teknologi Pendidikan Tinggi Nomor 32 tahun 2016 (the Act of Higher Educational Research and Technology number 32 of year 2016) consists of: 1) Accreditation instruments for Study Program that is arranged based on the types of education, education program, learning modus, and particular matters; and 2) accreditation instruments for University that is arranged based on the management of the college, which are the private University, public University, public University with the finance management pattern of a general service agency, or law agency public University.

Indonesian Accreditation Agency (Lembaga Akreditasi Mandiri-LAM)

LAM is an institution formed by the government or society to independently conduct the accreditation on the study program based on its branch in knowledge. This institution has the duties and authorities as follows: 1) To arrange the accreditation instruments of the study program based on the inter-standard interaction in the National Standard for Higher Education (SNPT); 2) Conduct the accreditation of the study program; 3) Publish, alter, or withdraw any decision on the accreditation status and the accredited rank of a study program; 4) Examine, perform the truth test and decide the objection proposed on the accreditation status and/or the accredited rank; 5) Build and develop the network with the authorities in national and international level; 6) Arrange the evaluation instrument of the opening of a study program based on the National Standard for Higher Education alongside the *Direktorat Jenderal Kelembagaan Ilmu Pengetahuan, Teknologi, dan Pendidikan Tinggi*; 7) Perform monitoring and evaluation on the requirements fulfillment for the accreditation status and the accredited rank of the established study program; 8) Give recommendation on the minimum requirement fulfillment of the accreditation for the study program opening to the *Direktorat Jenderal Kelembagaan Ilmu Pengetahuan, Teknologi, dan Pendidikan Tinggi* or the law agency/legal entity public college; 9) Deliver the accreditation result report equipped with the recommendation periodically to the Ministry with the copy to the BAN-PT.

National Accreditation Body for Higher Education (Badan Akreditasi Nasional Perguruan Tinggi/ BAN-PT)

BAN-PT is a non-structural institution formed by the Government, which is the Minister to conduct and develop the accreditation of university independently and be responsible to the Ministry. This agency has the duties and authorities as follows: 1) Develop the accreditation system of study programs and colleges in accordance with the policy of college development; 2) Arrange and establish the accreditation instruments based on the National Standard for Higher Education (SNPT); 3) Conduct the accreditation of university; 4) Publish, alter, or withdraw the decision on the accreditation status and the accredited rank of colleges; 5) Examine, perform the truth test, and decide the objections proposed on the accreditation status and/or the accredited rank of the college; 6) Build and develop the network with the authorities in national and international level; 7) Conduct the assessment of worthiness of a LAM establishment as the foundation of the recommendation for the Minister's acknowledgement to the LAM; 8) Evaluate the LAM's work performance periodically with the result reported to the Ministry; 9) Arrange the evaluation instruments for the foundation of a college based on the national standard of college education along with the *Direktur Jenderal Kelembagaan Ilmu Pengetahuan, Teknologi, dan Pendidikan Tinggi*; 10) Give recommendation of minimum accreditation requirements fulfillment of a college foundation to the Direktorat Jenderal Kelembagaan Ilmu Pengetahuan, Teknologi, dan Pendidikan Tinggi; and 11) Deliver the accreditation result report equipped with the recommendation to the Ministry periodically.

National Standard of Education (Standar Nasional Pendidikan-SNP)

National Standard of Education (SNP) is consist of: 1) Graduate's Competencies Standard; 2) Instructional Content Standard; 3) Instructional Process Standard; 4) Instructional Assessment Standard; 5) Lecturer and educators staff standard; 6) Instructional facilities and infrastructure standard; 7) Instructional Management Standard; and 8) Instructional Financing Standard. From all of these Standar Nasional Pendidikan then made to be the reference in the drafting/arrangement, execution, and evaluation of the curriculum.

Graduate's Competencies Standard

Graduate's Competencies Standard is the minimal criteria on the graduates competencies qualification that involves the attitude, knowledge, and skills stated in the formulation of the graduates learning achievements. Graduate's Competencies Standard that stated in the formulation of the graduates learning achievements is used as the main reference for the development of the standard of the learning material, standard of learning process, standard of learning assessment, standard of lecturers and education staffs, standard of learning facilities and infrastructures, standard of learning management, and standard of learning financing. The formulation of the graduates learning achievements is required to refer to the description of the learning achievements of the graduates of KKNI and has the equality to the qualification level on the KKNI.

Attitude is the right and cultured behavior as the result of internalization and actualization of the norm and values reflected on the spiritual and social life through the learning process, the

student's work experience, research and community service related to the learning process. Knowledge is the systematic mastery/understanding of the concept, theory, method, and the philosophy of a certain field that is gained by reasoning in the learning process, the student's work experience, research and/or community service related to the learning process.

Skill is the ability to perform work by utilizing concepts, theory, method, materials and instruments gained by learning process, the student's work experience, research and community service related to the learning process, including general skills as the general work skill that must be owned by every graduates in order to ensure the equality of the graduates skills in accordance to their program level and the type of the college education and the special skills as the special work skills that must be owned by every graduates in accordance to the knowledge field of the study program. The student's work experience is the experience in the activities in a certain field in a certain period of time, in the form of work training, practice work, work field practice or any other similar form of activities.

The formulation of attitude and general skills as part of the graduates learning achievements for every program level and the type of college education. While the formulation attitude and general skills can be added by the college education. The formulation of the knowledge and special skills as part of the graduates learning achievements must be arranged by the same type of study program or other tantamount name or study program manager in case of not having the same type of study program forum. The formulation of attitude and general skills and the formulation of the knowledge and special skills is one entity of the graduates learning achievements formulation to be established to be the graduates learning achievements. This formulation of the graduates learning achievements is studied and established by the Ministry as the reference for the similar kind of the study program.

Instructional Content Standard

Instructional Content Standard is the minimal criteria of the depth and breadth level of the learning material. The depth and breadth of the learning material is refer to the graduates learning achievements. The depth and breadth of the learning matter on the programs for profession, specialist, magister, applied magister, doctoral, applied doctoral, must utilize the research result and the result of community services.

The depth and breadth level of the learning material for every education program is formulated by referring to the description of the graduates learning achievements from KKNi. The depth and breadth level of the learning material is divided into seven with the following details : 1) Graduates of Diploma satu at least master the general concept, knowledge, and a complete operational skill; 2) Graduates of Diploma dua at least masterr the basic principle of knowledge and skills of a certain field; 3) Graduates of Diploma tiga at least master the theoretical concept of a certain knowledge and skill field in general; 4) Graduates of Diploma empat and bachelor degree at least master the theoretical concept in a certain knowledge and skill field in general and the theoretical concept of a special part of a certain knowledge and skill field in depth; 5) Graduates of profession program at least master the application theory of a certain knowledge and skills; 6) Graduates of the magister, applied magister, and specialist at least master the

theory and application/applied theory of a certain knowledge field; and 7) Graduates of a doctoral, applied doctoral, and subspecialist at least master the scholarly philosophy of a certain knowledge and skills. The depth and breadth level of the learning material is cumulative and/or interactive, which is poured into the study material structurized in the form of lecture courses.

Instructional Process Standard

Instructional Process Standard is the minimum criteria for the learning process's execution in the study program to achieve the graduates' learning achievements. This standard consists of: 1) Characteristic of the learning process; 2) Planning of learning process; 3) Execution of learning process; and 4) the student's study load.

Instructional Assessment Standard

Standar penilaian pembelajaran is the minimal criteria on the process assessment and the student's learning result in order to fulfill the graduates learning achievements. The process assessment and the student's learning result includes: 1) assessment principle; 2) assessment instrument and techniques; 3) assessment procedure and mechanism; 4) assessment execution; 5) assessment report; and 6) student's graduation.

Lecturer and Educators Staff Standard

Lecturer and educators staff standard is the minimal criteria on the qualification and competencies of the lecturers and education staffs to organize the education in order to fulfill the graduates learning achievements.

Instructional Facilities and Infrastructure Standard

Instructional facilities and infrastructure standard is the minimal criteria on the facilities and infrastructures in accordance to the necessary learning process and materials in order to fulfill the graduates learning achievements. This standard of learning facilities at least consist of : 1) Furnitures; 2) Education tools; 3) Education media; 4) Electronic books and repository; 5) Communication and information technology facilities; 6) Experiment instruments; 7) Sport facilities; 8) Art facilities; 9) Public facilities; 10) Disposable material; and 11) Maintenance, security and safety facilities.

As for standard of learning infrastructures at least consist of: 1) Land; 2) Classrooms; 3) Library; 4) Laboratorium/studio/workshop/production unit; 5) Gym; 6) Art room; 7) Student activity unit room; 8) room of the head of the college; 9) lecturer's room; 10) Administration room; and 11) Public facilities including road, water, electricity, sound communication network; and data.

Instructional Management Standard

Instructional Management Standard is the minimal criteria on the planning, execution, controlling, monitoring, and evaluation, and the report of the learning activity in the level of study program. Standard of learning management must refer to the standard of the graduates competencies, standard of the learning material, standard of the learning process, standard of lecturers and education staffs, and standard of the learning facilities and infrastructure.

The execution of the management standard is performed by the study program and college manager unit. Study program manager unit is required to: 1) Perform the curriculum arrangement and learning planning in every lecture courses; 2) Execute the learning program according to the material standard, process standard, assessment standard that has been established in order to achieve the graduates learning achievement; 3) Perform the systemic activities that creates a good academic atmosphere and quality culture; 4) Perform the monitoring and evaluation activities periodically in order to keep and improving the quality of the learning process; and 5) Report the result of the learning process periodically as the data and informatio source in the decision making and the quality improvement of the learning process.

In executing the management standard, college is required to: 1) Arrange the policy, strategic plan, and operational related to the learning process that can be accessed by the acedemic community and authorities, and can be the guidance for the study program in executing the learning program; 2) Execute the learning process according to the type and program of the education that is in line with the graduates learning ahievements; 3) Maintain and improve the management quality of study program in executing the learning program sustainably with the targets which corresponds to the vision and mission of the college; 4) Perform the monitoring and evauation on the study program activities in the execution of the learning activities; 5) Having the guide for planning, execution, evaluation, monitoring, quality guarantee, and development of the learning activities and lecturers; and 6) Delivering the performance report of study program in executing the learning program at least through the database of college.

Instructional Financing Standard

Instructional Financing Standard is the minimal criteria on the components and the amounts of the investments and operational funds arranged in the fulfillment of the graduates learning achievements. The college's investment funds is part of the college funds for the procurement of facilities and infrastructures, lecturers and education staff's development in the college. While the college operational funds is part of the college fundings necessary for executing the education activities involving the lecturer's funds, education staffs' funds.

College operational fundings is set per student per year called by the college operational fund standard unit. College operational fund standard unit for college is established periodically by the Ministry by considering: 1) Type of study program; 2) Accreditation level of college and study program; and 3) The region price index. College operational funds standard unit become the foundation for every college to arrange the annual budget revenue plan of college and set the cost charged to the students.

College must have the funds system and performing the cost recording according to the requirement of law and regulations until the unit of study program, perform the college operational funds analysis as part of the work plan and annual budget revenue arrangement, and perform the evaluation of the achievement level of the college cost unit standard in the end of every fiscal year.

National Standard of Research

The scope of the research standard consists of: 1) Standard of research result; 2) Standard of research material; 3) Standard of the research process; 4) Standard of the research assessment; 5) Researcher standard; 6) Standard of research's facilities and infrastructures; 7) Standard of the research management; and 8) Standard of the research's funding and finance.

Standard of the Community Service

The scope of the standard of community service is consists of: 1) Standard of the result of community service; 2) Standard of the contents of community service; 3) Standard of the process of community service; 4) Standard of the assessment of community service; 5) Standard of the executor of community service; 6) Standard of the facilities and infrastructures of community service; 7) Standard of the management of community service; and 8) Standard of the fundings and finance of community service.

Accreditation Mechanism

Phases of accreditation are consist of: 1) This data and information evaluation involving the activities of the head of the college proposing the request to LAM for accreditation of study program and/or BAN-PT for accreditation of college and LAM and/or BAN-PT perform the adequacy evaluation on the data and information of study program and/or college by using the data and information on the PDDikti performed by the assessor who lived in the region of the Lembaga Layanan Pendidikan Tinggi (College Service Institution) 2) The establishment of the accreditation status and the accredited rank involving LAM and/or BAN-PT processing and analyzing data and information from the requester college, to establish the accreditation status and the accredited ranks of a study program and/or college and LAM or BAN-PT announce the accreditation status and the accredited rank of a study program and/or college in accordance to their own authorities. In this case, the head of the college has to propose the re-accreditation request no later than six months before the end of the validity period of the accreditation status and the accredited rank of a program study and/or college; and 3) Monitoring and evaluation of the accreditation status and the accredited rank including the activities of LAM and BAN-PT performing the monitoring and evaluation on the fulfillment of the established accreditation status and the accredited rank requirements of the study program and/or college, based on the data and information from PDDikti; facts from the field assessment; *Direktorat Jenderal Kelembagaan Ilmu Pengetahuan, Teknologi, dan Pendidikan Tinggi*; and/or *Direktorat Jenderal Pembelajaran dan Kemahasiswaan* and the accreditation status and the accredited rank of a study program and/or college can be withdrawn before the end of the validity period, if that study program and/or college is proven to no longer fulfill the requirements of the accreditation status and the accredited rank.

National Standard of Higher Education (SNPT)

According to the Decree of Minister of Education and Culture of the Republic of Indonesia Number 3 Year 2020, this National Standard of Higher Education is consist of National Standard of Education, Research Standard, and Standard of Community Service. National Standard of Education is the minimal criteria on the learning process in the college education in all of the

legal region of NKRI. While the research standard is the minimal criteria on the research system in the college that applied in all of the legal region of NKRI. As for the standard of community service is the minimal criteria on the community service system applied in all of the legal region of NKRI.

Based on the Decree of Minister of Education and Culture of the Republic of Indonesia Number 3 Year 2020, the purposes of this SNPT are : 1) To ensure the achievement of the goals of college education that plays the strategic role in improving the intellects of the nation, to further advance the science and knowledge by applying the humaniora/humanities values and also to sustainable culturalization and empowerment of Indonesian nation; 2) To guarantee that the learning process in the study program, research, and community service performed by the college in all of the legal region of NKRI reached the quality corresponding to the criteria established in the National Standard of Higher Education; and 3) To encourage the colleges in all of the legal region of NKRI to sustainably reach the quality of learning process, research, and community service even beyond the criteria established by National Standard of Higher Education.

Accreditation assessment and instruments must be able to measure the following dimensions in college: 1) Quality of the leadership and management performance: including the integrity of vision and mission, leadership, governance system, resources management system, strategic partnership, and internal quality assurance system; 2) quality and productivity of outputs and outcomes: in the form of graduates quality, scientific and innovation products, and benefit for the society; 3) process quality: including the learning process, research, community service, and academic atmosphere; 4) input quality: including human resources (lecturers and education staffs), students, curriculum, facilities and infrastructure, finance (budget and funding). Referring to these four dimension, BAN-PT determined the assessment focus into the criteria that involves the college's commitment on the institution capacity and the education effectivity that consists of these 9 (nine) criteria: 1) Criteria of Vision, Mission, Aims, and Strategy; 2) Criteria of governance system, administration, partnership; 3) Student Criteria; 4) Criteria of Human Resources; 5) Criteria of Finance, Facilities and Infrastructures; 6) Education Criteria; 7) Research Criteria; 8) Community Service Criteria; 9) Criteria of the Output and Achievements of Tridharma.

Output of this accreditation process is stated as accreditation status of a study program and college. Accreditation status of study program and college are consist of accredited and not accredited. The meaning of accredited rank on study program and college consist of 2 types in which the exceedance level is established by BAN-PT as follows: 1) well accredited, which is fulfilling the National Standard of College Education; 2) very well accredited and superior/excellent accredited, which is exceeding the National Standard of College Education; 3) other than that, the minimum accreditation for study program and college will be achieved when the permission from the Ministry is obtained. This minimum accreditation is valid for 2 years at most, and its requirements is established by LAM for study program and BAN-PT for colleges.

Data Management

According to Malayu S.P Hasibuan (2016:1) management comes from the word to manage, which means to manage. Meanwhile, according to Stephen P. Robbins, Mary Coulter (2012: 8) suggests that management is a process that involves coordinating and supervising other work activities to be able to complete activities effectively and efficiently. The meaning of efficiency itself is to get the most output from the minimum input possible, while effective is "doing the right thing", which is doing a job that can help the organization achieve its goals. According to Jogyanto (2005) data management is a form of information resources management that includes first, data collecting and recording process into the documents that functions as input for the system. Second, information resources saving process into a document file. Third, maintenance of the new data addition and data alteration so keep the information resources up to date. Fourth, organizing the data arrangement process in such a way to be able to fulfill the needs of information of the user.

Data management involves some main activities such as data collecting, data saving, and data processing. In the stage of data collecting, data collector has the task to collect data whether from internal or external of the organization. Internal part of the organization that performing this job is taken from all of work unit in the organization, so that every unit is represented in the Management Information System. Then, the collected data is saved to soon be processed or be delayed in the processing, depends on the needs of the managers. The saved data then gets processed. This is the part that changes the form of data to become the information that is in accordance to the manager's request.

Data management has a very important role in an organization. The functions of data managements are: 1) To improve the data accessibility that is displayed on time and accurately for the user, without the necessity of an information system as the intermediary; 2) To ensure the availability of quality and skill in utilizing the information system critically; 3) To develop an effective planning process; 4) To identify the needs on the information system supporting skills; 5) To establish the investments directed towards the informatio system; 6) To anticipate and understand the economic consequences of a new information system and technology; 8) To process the transactions, lowering the cost and create an income as one of their product or service; and 9) To process the transaction documents that happened.

Website-based information system

According to Fathansyah (2012), the system is an order (integration) consisting of some functional components (with unique functions and tasks) which are interconnected and collectively aim to fulfill a specific process. According to Anggraeni and Irviani (2017: 13), information is a set of data or facts organized or processed in a certain way so that it has meaning for the recipient. Based on this definition, an information system is a system within an organization that meets the needs of daily transaction processing, supports operations, is managerial and strategic activities of an organization, and provides sure outsiders with the necessary reports (Jogyanto, 1990).

According to Kadir (2010), there are six components needed in building an information system, namely: 1) Hardware; 2) Software; 3) Procedure; 4) People; 5) Database; and 6) Computer networks and data communications. In the information system pyramid, there are three levels. Level 1 uses information systems to support business processes and operators, level 2 uses information systems to support decision making, and level 3 uses information systems for competitive advantage strategies. Level one has an efficiency value, while levels 2 and 3 have an effectiveness value.

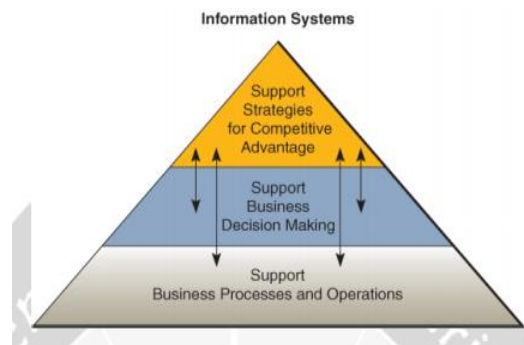


Figure 1. Information System Pyramid

A website or site is a collection of pages that display information on text data, still or motion image data, animation data, sound, video, and a combination of all of them, both static and dynamic, which form a series of interconnected buildings where each one is connected to page networks/hyperlinks (Wahana, 2006). There are generally two types of information on websites, namely static information, and dynamic information. Static information if the information on the website is fixed and does not change over a long period. Meanwhile, dynamic information is information that often changes periodically. Website or site elements include: 1) Domain name (domain name / URL - Uniform Resource Locator); 2) Home Site Website (Web Hosting); 3) Program Language (Program Script); 4) Website Design; 5) Website publication; and 6) website maintenance.

The website-based information system is an information system that becomes a standard for data storage, obtaining information, formatting data, and displaying information via a client/server architecture. This information system handles all types of digital information, including text, hypermedia, graphics, and sound, which is very easy to use by users because it implements a Graphical User Interface (GUI). Web-based information systems are the same as other information systems but have differences in programming languages, namely web programming languages and online web-based information systems. A web-based information system is a medium for displaying information about information through interactive media such as images, video, audio, or a combination of all of this data.

3. Research Methodology

This study uses a qualitative approach in obtaining information related to accreditation data management through interviews, observations, and using the Waterfall model in the development of an accreditation archive system. The waterfall model or the linear sequential model proposes an approach to software development that is systematic and sequential, starting at the level and progress of the system in analysis, coding design, testing, and maintenance.

The stages of system development in this study using the waterfall model are:

Planning

The planning stage is the stage to define the system's scope and requirements to produce an information system capable of managing accreditation data properly, creating information quickly, and providing system requirements. System requirements include hardware and software, which are very important in developing an archive management information system.

Analysis

At this stage, the authors study the existing archival data processing process in each study program and department at the Faculty of Economics and business to determine the interface display, analyze the required data requirements, analyze the functions and processes of the archive management information system to be created, and identify constraints in making the system.

Design

Perform system design following the needs of the study program and department. At this stage, we are designing input and output and display of information systems, applying the technique in program code, using Entity Relationship Diagram (ERD) diagrams to create database, and software architecture using Unified Modeling Language (UML).

Implementation

This stage is a measure of the success of developing an archive management system, namely by conducting a feasibility test of the information system through program testing.

Maintenance

This stage is the stage of maintaining an existing system. Activities at the maintenance stage include repairs to mismatches or system errors-repair activities by conducting a review starting from the design stage and the following stages.

4. Result and Discussion

Researchers researched the Faculty of Economics and Business, Jenderal Soedirman University. This research uses a qualitative approach. Methods of data collection using observation and interview techniques. Researchers made observations activities regarding documents related to the implementation of accreditation. These documents are supporting documents for standard 1 to standard nine following the new BAN-PT regulation. Based on observations regarding supporting data and supporting data management processes, the research team found that the

document archiving was not good. It was still tricky in the document search process, and the manager could not provide documents that could support the implementation of accreditation.

Apart from observation, the research team also conducted interviews and focus group discussions with several parties, including the vice dean of academics, the faculty quality assurance team, managers of study programs, and academic staff supporting data providers in accreditation. The conclusion of the interview results is as follows:

Data management

The study program and department management have not entered the accreditation data periodically, so the accreditation team must search for this data again at each study program accreditation period. Poor data management causes difficulties in finding the required data.

Input data

Accreditation data input is done manually by the accreditation team. Manual input is because the Faculty of Economics and Business does not yet have a website-based information system related to archives and does not yet have a database to store records relating to the accreditation process.

Data quality

Sometimes the data obtained from the survey results are not in sync with the points asked for in the accreditation. Managers have not been able to integrate data between one standard and another.

Management personnel

Each accreditation period, the manager forms an accreditation team to manage the accreditation of the study program. After the accreditation is complete, the accreditation team has finished carrying out its duties and will work again in the new team during the next accreditation period. It makes it difficult to trace the accreditation data for the previous period. Apart from these problems, in carrying out their duties, there are still difficulties in coordination between the accreditation team and education staff as data providers (for example, financial data, student data, research/community service data).

The results of the analysis of the website-based accreditation information system requirements

The Result of Website-based Accreditation Archive System Development is a solution to the results of the needs analysis according to the Study Program Accreditation Instrument (IAPS) guidelines. Based on the needs analysis results, the website-based accreditation information system model consists of the data collection stage, the data storage stage, and the data processing stage into a report.

Data collection

The accreditation archive system requires a variety of data. Data storage is in data storage. The data needs to conform to the nine standards based on the latest BAN-PT regulations. Data

requirements include: 1) Financial data, facilities, and infrastructure; 2) Human Resources Data; 3) Student Data; 4) Cooperation Data; 5) Education Standard Data; 6) Research Data; 7) Service Data; 8) Data on Output and Achievement of Tridharma.

Financial data, facilities, and infrastructure include data on educational, operational costs, student operational costs, data on research costs, data on community service costs (PKM), and investment costs. Human resource data includes permanent lecturer data, non-permanent lecturer data, and industry lecturer data. Student data includes student selection data and foreign student data. Collaboration Data presents faculty collaboration with various parties related to educational tridharma activities covering the fields of education, research, and community service. Education standard data includes curriculum, research activities, Community Service activities, and student satisfaction with the educational services obtained. Tridharma Output and Achievement Data include data on learning outcomes, student achievement in various competitions, local, national, and international students, student study periods, graduate data, and student activity outcomes. Admin/unit operators enter financial data, facilities and infrastructure, HR data, student data, collaboration data, education standard data, and tridharma output and achievement data into the accreditation archive system.

The lecturer's task is to enter data into the system, including research data and community service data. Lecturers enter research data into the system independently. Lecturers enter detailed research data starting from the research title, the source of funding and the number of funds obtained, the research period, and other data related to the research. Service data includes dedication title, funding source, amount of funds obtained, service period, and service partner.

Data Storage

The next stage after inputting data is data stored in the system. The system automatically stores data in data storage.

Processing of Data into Reports

After the admin/unit operator and lecturer save data into the data storage, the system automatically processes data or performs data calculations for reporting. The report is an accreditation document following the BAN-PT format. Furthermore, executive users who have access rights can print and download reports in document form. Executive users (study program coordinators, deans, or other users) can take advantage of reports on the study program accreditation process.

5. Conclusion

Based on the study results, the conclusion is that there are still many shortcomings in the accreditation data management aspects, including data management, data input, data quality, and personnel management. Based on the analysis of these needs, the development of a website-based accreditation system data management includes data collection, data storage, and data processing into reports. Data needs include financial data, facilities, infrastructure, Human Resource data, student data, collaboration data, education standard data, and Tridharma's

outcomes and achievements. Executive users make use of the reports for the accreditation process of study programs.

Reference

- Anggraeni, Elisabet Yunaeti dan Rita Irviani. (2017). *Pengantar Sistem Informasi*. Yogyakarta: Andi.
- Fathansyah. (2012). *Basis Data*. Bandung: Informatika Bandung
- Hasibuan, Malayu. (2016). *Manajemen Sumber Daya Manusia*. Jakarta: Penerbit Bumi Aksara.
- Indrayanto, Adi., dkk. (2020). Design of Accreditation Archive System to Ease the Accreditation Management During the Covid-19 Pandemic. *International Journal of Economics, Business and Management Research*. Vol. 4, No. 10; 2020.
- Jogiyanto. (2005). *Analisis dan Desain Sistem Informasi: Pendekatan Terstruktur Teori dan Praktik Aplikasi Bisnis*. Yogyakarta: Andi
- Kadir, Abdul. (2010). *Mudah Mempelajari Database MySQL*. Yogyakarta: CV. Andi Offset
- Robbins, Stephen P. and Mary Coulter. (2016). *Manajemen, Jilid 1 Edisi 13, Alih Bahasa: Bob Sabran Dan Devri Bardani P*. Erlangga: Jakarta.
- Wahana. (2006). *Menguasai Pemrograman Web dengan PHP 5*. Yogyakarta: Andi Offset.
- Wirawan. (2012). *Evaluasi Kinerja Sumberdaya Manusia, Teori Aplikasi dan Penelitian*. Jakarta: Salemba Empat.
- Peraturan Menteri Nomor 32 Tahun 2016 Tentang Akreditasi Program Studi dan Perguruan Tinggi.*
- Peraturan Menteri Nomor 3 Tahun 2020 Tentang Standar Nasional Pendidikan Tinggi*