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ADMINISTRATION SYSTEM DEVELOPMENT OF EDUCATION IN IMPROVING SERVICE QUALITY

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ABSTRACTS

The purpose of this study was to find out the development of a technology-based administration system in improving the quality of services in Higher Education. The data analysis technique uses the plomp method. This study uses a research development approach. The research subjects were three students for one on one test and twenty students for large group trials. The results showed that: based on the Likert scale 1-5, the average score of the expert system for the display aspect was 3.67 and the programming aspect was 3.85. So that the attractiveness of the system developed and the attractiveness of the product on the criteria are "very interesting", while fourteen students show the attractiveness of the product on the "Attractive" criteria.

Keyword:, *administration, quality, service, system, technology*

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1. INTRODUCTION

Environmental changes are very fast, and accompanied by high market demand resulting in demands on universities to make improvements in various aspects to support its sustainability. Educational institutions in their aim to serve the needs of the community as a whole must continue to develop in the face of rapid and unpredictable flows of globalization. These changes must be systemic, consistent, and scalable. For this reason educators, administrators, policy makers, and researchers are expected to innovate not only in terms of theory but also in the learning process, so that all parts of a complex organization can prepare the quality of their students to live and face the world of work (Serdyukov, 2017). Administrators at a college are an important part of supporting other parts. The efficiency of office management has several vital functions, including time management, document and workspace management, and control of job responsibilities (Upadhyay, Ladhe, Rai, Bhatkar, & Upadhyay, 2015). Through today's global competition, one of the keys to success is by providing quality services, therefore the trend that occurs now is the existence of strong competition in terms of

marketing, service quality, and business strategy (Abdullah, 2006). The convergence of digital technology and the creative economy has a considerable impact on society. The rise of the fourth industrial revolution resulted in the ease of accessing the technology used, and more integrated than before (Forum, 2018). The service system is largely determined by the value chain created together through the collaboration of dynamically relevant stakeholders in real time or approaching with the aim of providing superior services in accordance with business, service and customer goals (Lopes & Pineda, 2013). Service is a means to provide value to customers by providing the desired results to customers without maintaining certain costs or risks (Orand, 2011). There are several aspects related to the quality of administrative services in higher education, namely: form, reliability, responsiveness, certainty, and level of empathy. Efficiency is an important aspect of a large network. Without going through these considerations, network performance or service quality will be inefficient and slow (Wilianto & Fitri, 2015). High service quality is needed but the criteria for success are insufficient. Thus, service quality must be maintained longitudinally (Stamenkov & Dika, 2015). The existence of discrepancies and gaps between the priorities expressed by the customer and the level of quality conveyed by the company are the main contributors in terms of changes in pressure that exist in the service environment and product performance and product delivery (Al-Hudhaif, 2010). The research conducted by Stamenkov & Dika (2015) aims to measure customer perceptions of the quality of services provided by information systems in the manufacturing industry in Riyadh. The results of the study state that there is a strong relationship between organizational size (investment) and the level of quality of information system services. This study state that a continuous model of electronic service quality focuses on relationships between factors, and provides a research foundation for its translation in other contexts. Landrum found that the Magal instrument that was the success of the information center was effective in the context of services because of its service orientation. One of the important results of their study was to support the use of Magal instruments as an alternative to SERVQUAL for researchers and managers interested in assessing service quality (Landrum, Prybutok, & Zhang, 2007). In order to achieve this goal, the Universitas Pendidikan Ganesha Singaraja which is one of the educational institutions that manages several faculties and graduate programs strives to provide excellent service for all academic communities within it, one of them through the Department of Accounting Diploma III under the auspices of the Faculty Economy.

Customer satisfaction is the most important measure in assessing the quality of services provided by service providers to customers. The positive feedback from customers leads to a positive desire from service providers, which indirectly expand their business, while negative feedback makes it less (Gupta & Rokade, 2016). The quality of services provided by institutions in marketing service products greatly affects customer satisfaction. The strategic role of service quality in the future plays an important role in determining institutional success. Thus, improving the quality of service is able to encourage each institution to provide the best service to customers. Research of Salameh, Ahmad, Zulhumadi, & Abubakar (2018), this study aims to explore the impact of the dimensions of system quality, namely, ease of use, accessibility, interactivity and website innovation on service quality (SQ) and customer satisfaction. The results of this study indicate that ease of use, interactivity and website innovation have a significant positive

relationship with SQ. In applying the concept known as e-learning it can have an effect on the process of transforming conventional education into digital form. Manual administration management is not the best solution to be applied in modern times, because it will cause inefficiencies in terms of time and costs. Managing computerized administration or often called e-administration or computerized administration is the best choice to support the effectiveness and smooth administration.

Information technology (IT) is a key element of the digitalization of business models that exist today and dominates innovation efforts for most industries. Until now, IT has been considered excluded from structuring and automation (Tambo & Filtenborg, 2017). Many people consider that the quality of information systems (IS) is very important for companies to get a return on their investment in IS technology (Guimaraes, et al., 2017). Information technology (IT) is at the heart of the digitalization of business models that exist today and dominates various industries in product innovation, which then becomes the locomotive for many new industries and business models (Ba & Nault, 2015; Chase (2011); Kodama, 2014). IT has a huge influence on most industries. Executives argue that digitalization has experienced rapid growth and development. But even more surprising: there is very little empirical evidence that reveals the magnitude of digital disturbances and the reactions experienced by incumbents on a wide scale (Bughin & Zeebroeck, 2017).

Even humans always need information to carry out any activity and anywhere, information needed can be in the form of oral or written, even visual and audio visual. So that it is not impossible if later the information will become a basic human need to continue to develop and survive, it requires an information that is in terms of time that can be easily obtained, while the quality is the accuracy of that information. From time to time information is experiencing very rapid development along with the development of information technology, with the development of information technology, information users are more easily getting information according to their needs, but this development must be balanced with the development of human resources and supported by media or adequate information. Research of Kharbat et al., (2013) aims to develop a theoretical, comprehensive, and measurable framework for assessing the quality of the Journal Management System in encouraging the improvement of web-based Content Management Systems (CMS) design and implementation. Research on academic information systems is carried out by Yazici, Mishra, & Kontogiorgis (2015). The results of previous relevant research are a reference for curriculum development in terms of the implementation of interdisciplinary ITSM degree or certification programs and provide motivation and provide guidance for researchers through quantitative data provided in the field of ITSM. In the context of business organization, quality refers to an administrative philosophy that reveals the overall policy making or administrative system based on positive radical changes in the organization (Saif, 2014). The quality of education can be interpreted as a set of terms and conditions that must be available in the education process to meet the needs of recipients. In other words, the quality of education is an approach oriented to a system that is integrated and directed at meeting the needs of students (Randall, 2002). In addition, quality is an approach to improve business performance that can replace conventional administrative methods (Abu Nabah, 2004) and is currently used in academic and non-academic fields to improve quality, infrastructure, and the internal and external environment and

appears in quality academic and non-academic aspects, infrastructure, and the internal and external environments. To ensure that academic and non-academic activities run well, the effectiveness and efficiency of services to the academic community, aspects of procedures, implementation, and service units need to be regulated in a system. Based on the explanation above, it is necessary to analyze more deeply the development of a technology-based administration system to improve the quality of services in Higher Education.

2. RESEARCH METHODS

This type of research is a research and development (R & D) which emphasizes the research capability in making a product either in the form of materials, media, tools and learning strategies or educational engineering. R & D is a process used to develop and validate educational products. This research uses design development of Plomp model. Design of Plomp model development is one systematic design model and appropriately used in educational development research. A common model for solving the educational problems raised (Plomp, 1997) hereinafter referred to as the Plomp model.

Design of Plomp model (showed in figure 1) development is one systematic design model and appropriately used in educational development research. This model consists of five steps, namely: (1) Preliminary Investigation, (2) Design, (3) Realization / Construction, (4) Test, Evaluation, Revision, and (5) Implementation.

1. Initial Investigation Phase (Prelimenary Investigation)

Activities undertaken at the initial investigative stage are gathering and analyzing information, defining problems, planning future activities, identifying and reviewing the theories underlying development. This data collection serves to strengthen the background of the problem, the purpose of the research, and its benefits. At this stage also analyzed to (a) Analysis of theme determination (b) Analysis of literature study (c) Data collection.

a. Determining the theme, including the identification of needs and characteristics of users through observation and interviews on students about the administrative system applied today.

b. Library study of technology-based administration system applied to an educational institution. Based on preliminary observation and literature review can be identified and identified problems faced by students and lecturers in the current administration process.

c. Data collection related to the constraints in the administrative process, the technology that needs to be developed, and the requirements and procedures that need to be passed in developing technology-based administration system in Diploma III Accounting majors.

2. Design Phase

Stages of design is the process of changing needs that still form the concept into a specification of technology-based administration system in real learning activities. After the design phase, then will be developed technology-based administration system in accordance with user needs. This administrative system will use HTML and PHP programs for the design and design of this system, while for the database used MySQL program. The name designed for this system is "localhost / accounting /". This system consists of: nine menus that will appear on the wall or the front wall of the system.

MENU 1 is a teaching material. MENU 2 is Data Lecturer and SKP. MENU 3 is Student Affairs. Menu 4 is a Field Work Practice. Menu 5 is the Organization Structure of the Department. Menu 6 is the Standard Operating Procedure. Menu 7 is the correspondence. Menu 8 is Final Project. Menu 9 is Exam.

3. Realization Phase (Construction)

Design is a work plan or design based on the objectives to be realized in order to obtain a solution in the phase of realization / construction. This stage as a continuation of activities at the design stage. At this stage prototype 1 is produced as a result of content design. (Mardika, 2008) also explains that in this process it aims to produce an initial product and then tested its validity by experts and practitioners from the theoretical rational angle and consistency of its construction.

4. Test Phase, Evaluation, Revision

A developed solution should be tested and evaluated in practice. Evaluation is the process of collecting, processing and analyzing information systematically, to obtain the realization value of the solution. Without an evaluation it can not be determined whether a problem has been resolved satisfactorily or otherwise. In other words, is the desired situation as described in the formulation of the problem solved.

This stage aims to consider the quality of the designs developed and make sustainable decisions based on the results of expert considerations as well as limited trials. The purpose of these activities is to test the correctness of concepts, the suitability of learning strategies, and refine the models and tools based on expert validation. Based on the collected data can be determined which solutions are satisfactory and which ones still need to be developed. Then a reverse cycle activity will be required, so the cycle is repeated until the desired solution is reached. If the technology-based administration system developed has obtained results, then the results can be tested. Testing is done after all ingredients are entered at the manufacturing stage. At this stage can be seen that the system has been made to run well or vice versa. In this research, the design trials will be conducted in two stages: (1) Limited trials, namely: system feasibility test by competent lecturer and feasibility test by user in this case students Diploma III Accounting Universitas Pendidikan Ganesha; (2) Testing more broadly, ie in this case the students of the Faculty of Economics.

5. Implementation Phase

After evaluation and obtained valid, practical, and effective product; then the product can be implemented in the real situation and the wider region. This implementation can be done by conducting further research on the use of product development on a wider area. In the implementation phase Implementation) is not done by researchers, this phase requires a long process and time. The test subjects of this content development research product are:

a. Stage review of experts

The review stage is conducted by the feasibility test of the system by a competent lecturer and feasibility test by the user in this case a student majoring in Diploma III Accounting Universitas Pendidikan Ganesha.

b. Individual Trial Stage, Small Group Trial and Field Trial

The subjects of this research are manager, faculty staff, and students of Diploma III Accounting Universitas Pendidikan Ganesha. The object of research

is technology-based administration system to improve the quality of service in Higher Education.

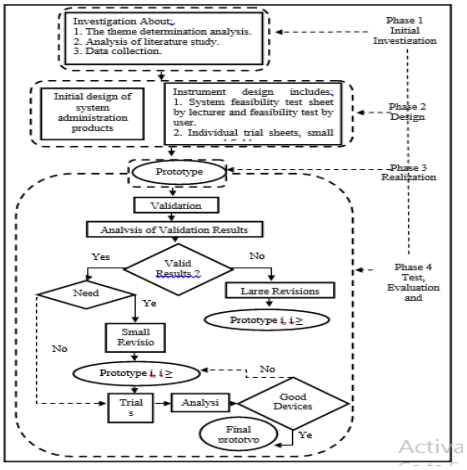

Figure 1. Flowchart of Development Phase by Tjeerd Plomp

Data Type

The data used in this study consisted of qualitative and quantitative data. The data was then analyzed descriptively. Qualitative data used are in the form of comments and suggestions for product improvement from material experts and media experts who are then analyzed and explained qualitatively to evaluate the products developed. Quantitative data is assessment data in the form of material experts and media experts as well as scores of observations. The data collected is through the implementation of formative evaluations and grouped into two, namely: (a) The first evaluation data in the form of data review system feasibility test results by lecturers and feasibility trials by the user. (b) Individual, small group, and field test results in the form of results of student reviews and responses. (c) The results of all data obtained are grouped into two according to their nature, namely qualitative and quantitative data obtained from the result of feasibility test of lecturer system and feasibility test by user, individual test, small group test, and field test. First, quantitative data of expert material scores and media expert were analyzed descriptively with reference to conversion value tables adapted from Sukardjo (2005), resulting in the guidance showed in Table 1 below.

Table 1

Guideline of Conversion of Quantitative Data to Qualitative Data

Value	Score interval	Criteria
A	X > 4,21	Very good
B	3,40 < X ≤ 4,21	Good
C	2,60 < X ≤ 3,40	Enough
D	1,79 < X ≤ 2,60	Less
E	X ≤ 1,79	Very Less

Information: _

Maximum score is ideal = 5 X i = ½(5+1) = 3

Manimum score is ideal = 1 SBi = 1/6(5-1) = 0,67

Second, the quantitative data of observed product attractiveness is changed to qualitative data based on the conversion of the value adapted from Sukardjo (2005) as showed in **Table 2 below.**

Table 2

Guidelines for Quantitative Data Conversion to Qualitative Data for Attracted System Developed

Value	Score interval	Criteria
A	X > 12,806	Very Interesting
B	9,602 < X ≤ 12,806	Interesting
C	6,398 < X ≤ 9,602	Quite Interseting
D	3,194 < X ≤ 6,398	Less Attractive
E	X ≤ 3,194	Very unattractive

Information:

Maximum score = 1 x 16 = 16 $\bar{X}$ i = ½(5+1) = 3

Manimum score = 0 x 16 = 0 SBi = 1/6(16-0) = 2,67

X = The actual score

3. RESULT

The basis of estimation for valid or invalid of each instrument item is by using correlation index of validity problem, where if product moment correlation (r_{count})> r_{table}, then every item of instrument is said valid. The r_{table} of 0.279 and product moment correlation coefficient of each item is greater than the r_{table}. Every questionnaire item is valid.

The results of the instrument validity test for the Effectiveness of Information System Development performed by using computer program statistics SPSS 19.0 for Windows. The results of validity test show a positive correlation at level 0.000-0,004 or below 0.05 which means that all statements in the questionnaire effectiveness and efficiency of technology-based information system development able to reveal the effectiveness of technology-based information system development to improve the quality of service in Higher Education.

The reliability of the research instrument is assessed through the magnitude of the Alpha Cronbach coefficient, which shows the internal consistency of the items underlying a variable. The value of an instrument is said to be reliable when the Cronbach Alpha value is greater than 0.7 (Ghozali, 2011). Reliability test results show that all variables have Alpha Cronbach greater than 0.7. Thus, it can be concluded that the instruments of effectiveness and efficiency of information technology-based Information Development is reliable.

1. Expert Validation Data

Expert validation data is data obtained by expert material judgment and system experts through questionnaires. Material experts judge aspects of content, experts the system assesses the display and programming aspects. After the analysis, using a score range of 1 to 5, Meanwhile, the average scores of expert system judgments for the display aspect of 3.67 and the programming aspect of 3.85. Average expert scoring score systems on the aspect of display and programming belong to both criteria. With the results mentioned above, it is concluded that the administrative system within services in universities both viewed from the aspect of the content as well as from the aspect of display and programming because it obtains the average value of the overall "B" or pertained "Good" criteria.

2. Observation Result Data

From the results of the questionnaire given to respondents, it can be seen that the attractiveness of the system developed on the criteria is "very interesting", while the three students show the attractiveness of the system on the "Interesting" criteria. Through a large group trial known as sixteen students from twenty students who were observed had shown the attractiveness of the product in the "very" interesting criteria. Whereas fourteen students showed the appeal of the product on the criteria "Interesting".

The design of computer-based academic administration system.

System design is to design or create a new system that is applied to solve the old problem. The definition of the functional requirements and preparation for the implementation of the design, depiction of how the system is formed. In this research the making of application program based on website by using MySQL database handling input, process and output desired. Website application program using XAMPP Control Panel v3.2.1.

The design of a computer-based academic administration system creates convenience and speed for various parties in accessing data.

Through the results of questionnaires given to users of information systems then obtained the results through the development of administrative system that most respondents answered that the number of lecturers and students who use computer-based information systems especially in carrying out tasks or daily work, Work done becomes more interesting and easy if utilizing information systems, Utilization Information systems in carrying out the work is not much time-consuming, Using Information systems can help in completing tasks, Using Information systems will increase the opportunity to perform different tasks and achieve a better position, There are friends / colleagues or superiors help and encourage both in introducing and in utilizing the Information system.

While in terms of effectiveness of the implementation of the information systems through the results of questionnaires distributed most of the respondents stated that with the implementation of information systems, the need for back-up as a backup or substitute for the security of data stored on the computer, the speed of time in academic administration, accuracy in processing and presentation data, compatibility between data stored with required data, System can provide report / data needed with very variatif.

Nonetheless, the students are still facing obstacles in accessing the online system related to administrative activities, as in (1) Procedures for submission of the Job Training; (2) Procedure for filing of Final Project; (3) Lecturer Workload Administration,

Factors supporting and inhibiting the implementation of administrative system development.

This research is consistant with Ferreira & Kuniyoshi (2015), the result showed that the support of the top management, the communication process for the clear evidence of this support, the technical support of the ERP program provider together with the project team expertise, training and qualification processes of the team in the system operation are significantly correlated and relevant factors for a successful implementation of the project.

Factors influencing the success of information system implementation, including support from executive management, end user engagement, the use of clear corporate needs, careful planning, and real corporate expectations. While the reasons for the failure of the application of information systems include: Lack of support from the management, Not Have Planning Adequate, Incompetence Technology, Communication between Users with Information System Designers, Level Complexity and Risks.

Factors influencing the success of information system implementation, including support from executive management, end user involvement, clear company needs, mature planning, and real company expectations. While the reasons for the failure of the application of information systems, among others, due to lack of executive management

support and input from end-users, the statement of needs and specifications are incomplete and always changing, and technological incompetence.

4. CONCLUSION

The importance of developing a quality administrative system in accordance with the results of the research and discussion above, the conclusions that can be taken are: (1) The design of computer-based academic administration system in this study using VisualBasic application program using MySQL database handling input, process and output desired. (2) The design of academic computer-based administration system creates ease and speed for various parties in accessing data. Information systems can assist in completing the task, while in terms of effectiveness of the implementation of the speed of time in the administration of academic services, accuracy in processing and presentation of data, The suitability between the data stored with the data required, System can provide reports / data needed with very varied. (3) There are four main aspects of data and information security. Privacy / Confidentiality, Integrity, Authentication, and Availability. (4) Factors that influence the success of the application of information systems, including the support of superiors, end user involvement (end users), the use of the needs of a clear course, careful planning, and expectations of real majors

The sugesstion are: (1) the strategic plan of the institutional administration system shall be an integral part of the institution's master plan in general. Relevance for each unit / unit within the institution should be clearly defined. (2) The administrative system strategy developed should ensure that knowledge management processes are effective in the institution. Creating institutions is central to the creation and storage of knowledge and transfer of knowledge among individuals within the institution. (3) It is recommended that institutions periodically and planned to continuously improve and maintain the professionalism of managers of academic information systems through education and training related to their field of duty. In addition, the HR management academic information system should also be better. Starting from the workforce planning, training, until the award system must be run and designed to fit and support the effectiveness of academic information systems.

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