



DEVELOPMENT OF ELECTRONIC SERVICES FOR LICENSING MANAGEMENT (ESPEI)

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ABSTRACT

Research and Development 4-D research design. Phase 4-D includes: define, design, develop and disseminate. The define phase aims to gather various information related to the product to be developed. The design phase aims to prepare the initial product design. The develop phase aims to produce a decent website. Disseminate phase is the final stage in product development. The subjects in this study consisted of two namely validator (expert expert online administration system and administration). The results of research on the development of eSpeSI according to validation or assessment from experts in the appropriate or good category if it will be applied in the field with the page <https://ptm.ustjogja.ac.id/spesi/web/>, while based on trials from users in this case students UST mechanical engineering education by stating the response was very good.

Keywords: electronic, administration, service

INTRODUCTION

The progress of Information and Communication Technology (ICT) or often referred to as Information and Communication Technology (ICT) in the era of globalization provides enormous benefits in aspects of life, such as in social, economic, cultural, health, education and other aspects. The progress of information technology must really be utilized as well as possible in supporting the achievement of objectives that began. The world of education is one element that can not be separated from the progress of information technology, began to use hardware and software to support the continuity of educational goals (Kadir & Triwahyuni, 2005).

The use of computers to access, process and present information, both individually and in groups, intra network (intranet) and international network (internet), is a primary need in the digital age. The application of ICT/ICT has the advantage of providing information widely, quickly, and precisely, there is ease in the process of making administration and technological support to facilitate the learning process (UNY, 2013).

The development of science, technology, and art (IPTEKS) in the current era of globalization which is so fast requires all people to adjust to achieve progress or vision. The Study Program has a vision, one of which is superior, superior in terms of education, teaching, service and internal and external services. Of course, in achieving this vision

requires the support of all elements that exist, both from human resources and facilities and infrastructure. Supporting facilities and infrastructures in the form of Information and Communication Technology are highly expected to support the achievement of this vision (Prakoso & Januardy, 2005).

One of the roles of the application of the industrial revolution 4.0 in universities is to utilize the internet in the university administration system, with an internet-based administration system, excellent service will be created. Internet-based administration will provide the efficiency of time and energy needed by employees in tertiary institutions. During this time with administrative services, students submit administrative applications directly to the existing administrative services in universities in a sense that is less efficient and takes time to publish applications.

The demand for fast and accurate services requires a good administrative system, therefore technological advances must be utilized as well as possible in the world of education, especially student administration services. The administrative system developed is an electronic service for licensing.

Administration is a business and activity related to the implementation of policies to achieve goals. Administration in a broad sense is the whole process of cooperation between two or more people in achieving

their goals by utilizing certain infrastructure in an efficient and effective manner. Administration in the strict sense is an activity which includes: notes, correspondence, light bookkeeping, typing, agenda, and so on which are technical in administration (Jostein Askim, 2019). Electronic License Handling service is a web-based approval workflow system, which was built in response to the ADM Division's need for the availability of appropriate, fast, and accurate work tools. investigated the claim that government agencies enjoy great security and long life.

RESEARCH METHODS

This research was designed by following the 4-D model of Research and Development design. According to (Thiagarajan, 1974) the stages in the 4-D (Four D Model) cycle include: define, design, develop and disseminate. The 4 steps of development in research are described as follows:

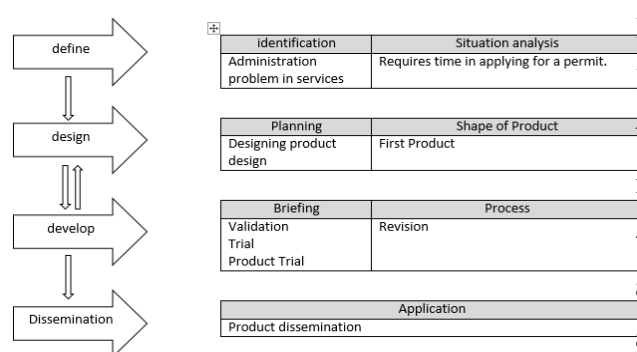


Figure 1. Model of Research and Development (4-D)

RESULTS AND DISCUSSION

Website media development carried out in this study includes four stages, namely: Define, Design, Develop, and Disseminate :

1. Define

The defining stage begins with observation and data collection of information about the problems being faced by the mechanical engineering education study program about management of information systems. Information is obtained through the head of administration as well as information staff in the study program, lecturer in the mechanical engineering study program. And documentation data through website searches that are still integrated with websites managed by faculty. The data or information obtained is collected and defined as material for the development of online administrative services integrated with the Study Program Study Program website.

2. Design

Product planning is done to prepare the Mechanical Engineering Education Study Program Website to be made. The results of the planning stage of the website structure include: 1) Header, 2) Nagivation, 3) Content, 4) Footer. In planning a website you should also consider:

- a. Usability (users can operate easily and quickly).
- b. Navigation/structure (finding easy paths when exploring sites).
- c. Contents/contents.

- d. Compatibility (Can be run on a variety of existing hardware and software).
- e. Loading Time.
- f. Accessibility (website pages must be used by everyone).
- g. Interactivity (visitors interact with websites, other sites or bring visitors to other sources).
- h. Communicative
- i. Visual (layout design, typography, and color).
- j. General website display as follows:

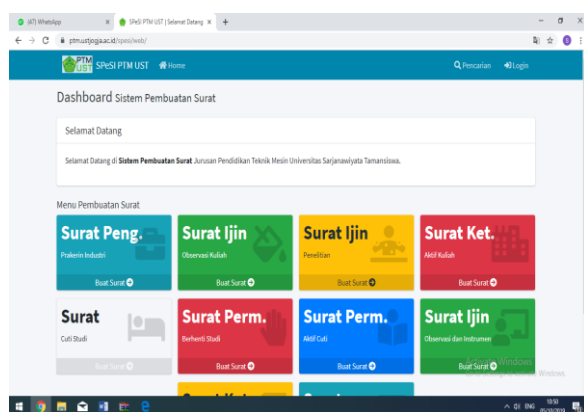


Figure 2. Design website administration services online

1. Develop

Website product development is done to produce a good website that has been revised and validated by experts (expert review) or website experts, namely from internal and external and by students of mechanical engineering education. The results of this validation can be categorized into two, namely qualitative results and quantitative results. Qualitative results in the form of comments and suggestions for improving the website. Suggestion validator on prototype 1 is used as the basis for designing prototype 2.

while quantitative results in the form of scoring of questionnaires that are spread about the feasibility of online administration services website.

a. Expert Validation Results

Product validation was carried out by 2 experts namely the head of the UST information system zainur wijayanto and eko Riyanto by providing programmer input as follows:

b. Expert validation

Aspects of Suggestions and Criticisms for Improvement :

Header Space header is too large, made proportional Space made proportional to the website page Navigation / structure Navigation management is fragmented Navigation is arranged into one place. Content Complete Data uploaded. The footer is made clearer, giving a more contrasting color. The font is already well maintained. In addition to these inputs there are a number of inputs such as a system integrated with information systems or study program websites that are already owned, the navigation structure of the website display is easier to understand, the color layout is more attractive. After all entries have been revised, they are returned to the validator for a second evaluation with the results of the product validation being feasible or good for application in the field

c. Student test results

Products that have been validated by the validator are then trialled to the student to

obtain responses or assessments of the product website for the online injection system. The results of the trial can be formulated as follows:

Table 1. Online administrative service system

Score	Aspect	Category
Usability	2.8	Good (Decent)
Navigation	3.0	Good (Decent)
Contents	3.0	Good (Decent)
Compatibility	2.8	Good (Decent)
Loading Time	3.1	Very good (Very decent)
Accessibility	3.2	Very good (Very decent)
Interactivity	3.0	Good (Decent)
Communicative	3.0	Good (Decent)
Visual (layout design, typography, and color)	3.0	Good (Decent)
	Average	3.0 Good (decent)

Based on table 1 online administrative service system from the response of students of mechanical engineering education university Sarjanawiyata Tamansiswa shows that the online administration system developed in the category of feasible / good. The aspects assessed in the system are Usability, Navigation / structure, Contents / content, compatibility, Loading Time,

Accessibility, Interactivity, Communicative, Visual (layout design, typography, and color).

Table 2. Student responses to online administrative services:

Rated Aspect	Percentage	Category
This website-based or online administration system can help me in managing academic administratio	91%	very good
This website-based administration system is very easy to access through various types of electronic media	87%	very good
The system provides complete licensing information	88%	very good
Access website-based administration on the website can be done anywhere without having to come on campus	93%	very good
To access website-based administration a low fee is required	89%	very good
To access website-based administration, a little labor is needed	87%	very good
The menus presented on the website are in accordance with the administrative requirements of licensing easily and quickly	91%	very good
I can read all the letters and numbers on the website clearly	91%	very good
The language used to convey information is very communicative and easy for parents to understand	91%	very good
Website-based or online administration systems are very easy to use	91%	very good
mean	90%	very good

Based on table 2. Student responses to online administrative services students provide very good responses, aspects of assessment based on effectiveness and efficiency required by students in administrative management in mechanical engineering education study programs are expected to be better and provide excellent service. The advantage of this system is that it can monitor lecturer performance accurately and accountably, can provide an objective performance assessment, and the data stored in the system is secure (Suparmin, 2020). Administration online It may hamper citizens' collaboration with organizations' policies, which, in turn, affect their successful implementation (Alon-Barkat, 2020). Model of online education of students is still low learning activity it can be known from the students just waiting for learning activities from teachers and be learning independence is also low, facilities owned by students such as laptops, android phones and internet access that is not biased utilized with both in the learning process (Setuju, 2018).

CONCLUSION

The development of the online administration system of the mechanical engineering education study program of the university students of Sarjanawiyata Tamansiswa can be stated as a whole and be applied in providing academic services. The results of research on the development of eSpeSI according to validation or assessment

from experts in the appropriate or good category if it will be applied in the field with the <https://ptm.ustjogja.ac.id/spesi/web/>, while based on trials from natural users this is a student UST mechanical engineering education stated that the response was very good. The third highest aspect in the urgency of the pedagogical competence of productive subject teachers is communicating effectively, empathically and politely with students (Ramdani, 2020).

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