ONLINE DOCUMENT MANAGEMENT SYSTEM DEVELOPMENT FOR SUPPORTING QUALITY ASSURANCE IN EDUCATION OF FACULTY OF EDUCATION, NAKHON RATCHASIMA RAJABHAT UNIVERSITY

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Abstract - This research has the objective for developing and evaluating the efficiency of the online document management system for supporting the quality assurance in Education of Faculty of Education, Nakhon Ratchasima Rajabhat University which is developed to be the tool in managing document files that are used to be the evidence for using for the reporting of the operating result of Faculty of Education, Nakhon Ratchasima Rajabhat University. In the inspection to evaluate the quality of the education which is operated in every academic year. The sample that are used in the study; are 5 experts in the development of the information system which is obtained with Purposive sampling. Tools that are used in gathering the information; are the evaluating form of the efficiency of the system, the analysis of the information with the average and the standard deviation which have operating results that is the researcher who has developed the system according to the theory of the cycle of the development of the system for 5 procedures such as; Project Planning, Analysis, Design, Implementation and Maintenance which the system can upload document files from the computer of the user conveniently in the form of "Drag and Drop" that can search for documents rapidly and can bring the location of other files to use for the reference in documents or in the process of inspecting to evaluate the quality of the education conveniently by the expert who has evaluated the efficiency of the overall system which will be in the very good level ($\bar{X}$ =4.59, S.D.=0.48).

Index Terms - Online, Quality Assurance in Education, The system of managing files.

I. INTRODUCTION

Quality assurance in Education is an important process of educational institutions in Thailand because it shows the development of the quality of management and activities in accordance with the mission of educational institutions at all levels. This is to continuously improve the quality of learners and to build confidence for educational service recipients. There are 2 quality assurance systems in the education system: 1) internal quality assurance system, it is a quality assessment, monitoring, quality inspection and quality development by personnel of educational institutions or agencies that are responsible for supervising educational institutions, at least once a year, and 2) external quality assurance system, it is a quality assessment, quality monitoring and standardization studies by the Office for Standards and Quality Assessment (Public Organization) or external person or agency certified, assessed every 5 years [1]. Nakhon Ratchasima Rajabhat University has conducted educational quality assurance with the goal to create academic excellence in terms of teaching, research, academic services, art and cultural preservation that will lead to the creation of ensuring that the society has managed quality education and produced quality graduates [2]. Therefore, it has implemented the internal quality assurance system developed by the Office of the Higher Education Commission, which has 3 levels of quality assurance, namely, curriculum level, faculty level and institutional level. Faculty of Education, Nakhon Ratchasima Rajabhat University is the faculty level, therefore must have quality assurance at the faculty level with 5 elements, namely 1) graduate production, 2) research, 3) academic service, 4) art and culture preservation, 5) management [1]. In the internal quality assurance, there will be an internal quality assessment committee appointed to assess from the self-assessment report, documentary evidence of the faculty, including interviews with people involved in the educational management process. Therefore, those responsible for various works need to manage and store a large number of documents, because all information comes from every step that is integrated into the administration and teaching process of the faculty throughout the academic year, which includes information and documents in lecture and numerical format. All documents must be able to explain the operations in accordance with the elements, standards and indicators that are specified, as well as be able to be used immediately, and obtain accurate, complete information [3], [4]. In addition, various information must be sent to the Quality Assurance Database (CHE QA Online) of the Office of the Higher Education Commission. Therefore, document management is an extremely important part in preparation for the assessment of educational quality. In the past, the Faculty of Education, Nakhon Ratchasima Rajabhat University still did not have an information system to help manage evidence documents for educational quality assessment, so there must be a lot of reports and evidence documents with copies. This creates

waste in preparing documents, delays and difficult to find information.

Therefore, Faculty of Education, Nakhon Ratchasima Rajabhat University has the idea to develop an online document file management system to support educational quality assurance as a tool for managing files, documents used as evidence for reporting results of quality assurance operations in education. This will help to store documents into more categories, able to search and bring documents to use easily. In addition, it is also a tool that provides public information that is useful to stakeholders and education management, both students, parents, employers, and the general public.

II. RESEARCH OBJECTIVES

1) To develop an online document management system for support quality assurance in education of Faculty of Education, Nakhon Ratchasima Rajabhat University.
2) To assess an online document management system for support quality assurance in education of Faculty of Education, Nakhon Ratchasima Rajabhat University.

III. RESEARCH METHOD

A. Research Framework

The development of online document file management system to support quality assurance in education has a conceptual framework for research as shown in Fig.1.

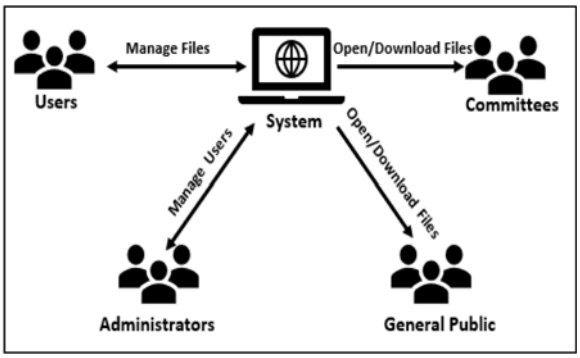


Fig.1 Research Concept Framework

1) Users: Personnel who are licensed by the system administrator, responsible for document management, quality assurance in education, file upload and deletion.
2) Administrators: Personnel who are responsible for managing users, assigning rights, modifying, and suspending user rights.
3) Committees: Quality assessment committees can be both university personnel and experts from outside the university. The committees will receive a self-assessment report in advance before the assessment date in order to study or give a preliminary score before entering to assess at the institution. The committees will be able to open evidence files in the system for consideration, scoring, or downloading files without logging in.
4) General Public: Stakeholders involved in educational management that is interested in studying the performance of agencies such as students, parents, employers, and the general public who can open evidence files or download files without logging in.

B. Samples

The research sample group is 5 experts in information system development by purposive sampling, having more than 10 years of experience in information system development.

C. Research Tools

1) Tools used in system development are Flowchart, Data Flow Diagram: DFD, Process Description, Entity-Relationship Model: ER-Diagram, Data Dictionary, JAVA, MySQL.
2) The tools used in the assessment are the system performance assessment form, which are questionnaires based on the 5-level rating scales in 4 areas: Function Test, Performance Test, Usability Test and Security Test, with 16 questions.

D. Data Analysis

In assessment the performance of the system, the data analysis from the questionnaire was used to find the mean and standard deviation. Other suggestions which are qualitative data will be used to summarize key points. The results of the questionnaires are as follows: 4.51 - 5.00 = The system is at a very good level of performance, 3.51 - 4.50 = The system is at a good level of performance, 2.51 - 3.50 = The system is at a moderate level of performance, 1.51 - 2.50 = The system is at the fair level of performance, and 0.00 - 1.50 = The system is at the level of performance that should be improved [5].

E. Methodology

The researchers have a system development process according to the information system development cycle theory 5 steps: Project Planning, Analysis, Design, Implementation and Maintenance [6],[7] ;

1) Project Planning: The process of studying problems from the work system and analyzing the feasibility of the project in various areas, including current problems and needs, resources for project implementation, equipment, tools, operational support, and possibility of system development in a limited time.
2) Analysis: Collecting various needs and insights into the needs of users by interviewing information from the management to use the information to design the system to meet the needs and cover various problems both current

and future.

3) Design: Using data from the Analysis step to design for leading to system development, including user interface design, database design, program design and creating a prototype of the system to allow administrators to check their needs again.
4) Implementation: The process of creating the system, testing the system, and installing the system to replace the original work system. In addition, related documents, training, and support for users are also provided, as well as reviewing and assessing the system after installation in order to assess whether or not the new system is in compliance with the goals, or how much users are satisfied.
5) Maintenance: It is a step to maintain the system for using in many years and support new technologies in the future. At this step, new features must be added to the system to increase work performance that might come from discovering errors from using the system or requesting to add new features to support new business processes or changes in the environment and technology.

IV. RESULTS

A. Results of System Development

The researchers have developed the system as a web application to facilitate users to access via the Web Browser at any time and develop according to the Responsive Web Design concept in order to support all devices with the important processes as follows;

1) The system uses the system menu to categorize documents according to the educational quality assessment elements, consisting of graduate production, research, academic services, arts and culture preservation, and management.
2) Users can upload files according to the menu and academic year selected, by using the method to click to search for files from the computer or using the "Drag and Drop" file from the computer to the file upload box which making the work is more convenient, as shown in Fig.2.

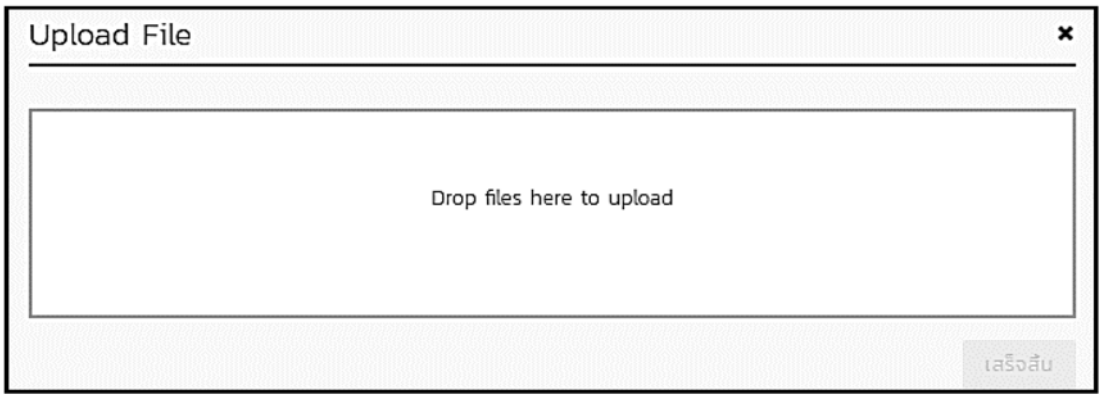


Fig.2 File Upload Screen

3) The system has the security of deleting document files. Users of the system can only delete files that they upload, cannot delete files from other users, as shown in Figure 3.

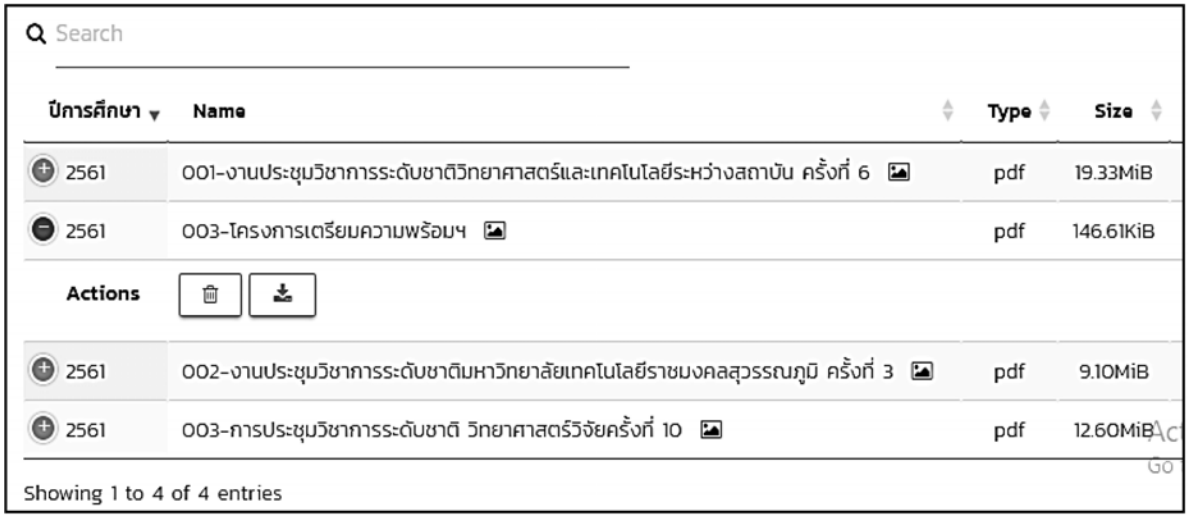


Fig.3 File Management Screen

4) The system can search for files according to the search term specified and sort the files in many conditions, including document name, type, size, user, and date of uploading documents.
5) When viewing files, the URL of that file can be copied to be used as a reference in the self-assessment report, or refer to the CHE QA Online system of the Higher Education Commission.
6) Quality assessment committee in education or the general public can open files and download files without logging in, as shown in Fig.4.

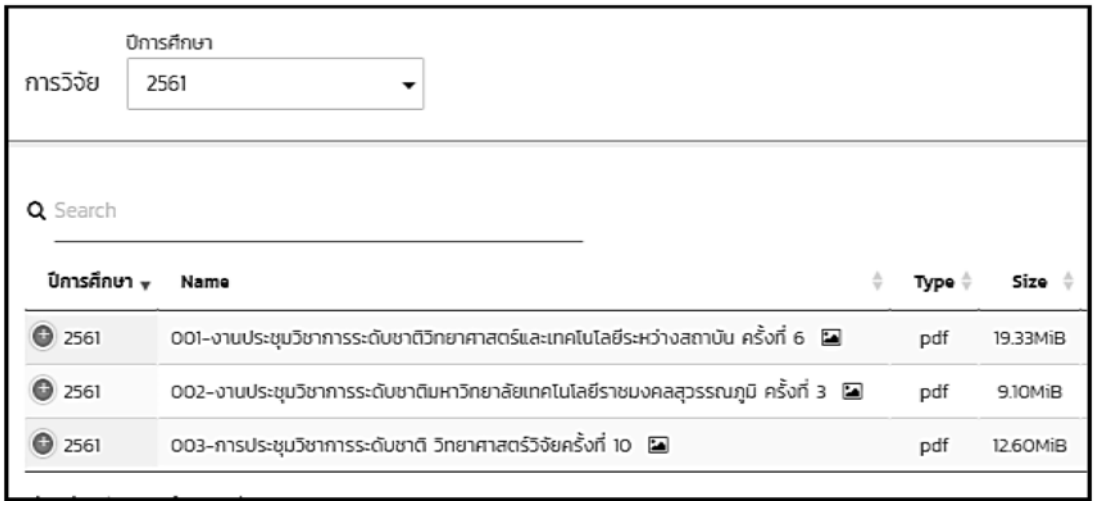


Fig.4 Documents of the Board of Directors or the General Public Screen

B. Results of System Performance Assessment

The results of the assessment of the performance of the system by 5 experts in the development of information systems can identify the assessment results classified by the assessment areas as shown in Table 1.

Table 1 Summary of the assessment of the performance of the system by experts in information system development

Assessment	$\bar{x}$	S.D.	Level
Function Test	4.80	0.36	Very Good
Performance Test	4.40	0.52	Good
Usability Test	4.56	0.53	Very Good
Security Test	4.60	0.51	Very Good
Mean	4.59	0.48	Very Good

Table 1 presents that the experts assess the overall system performance at a very good level ($\bar{x}$= 4.59, S.D. = 0.48). The most effective area is the Function Test ($\bar{x}$= 4.80, SD = 0.36). The least effective area is the Performance Test ($\bar{x}$= 4.40, SD = 0.52)

DISCUSSION

From the results of the research, the results can be discussed into 2 subjects, as follows:

A. System Development

The developed online document file management system to support educational quality assurance in the Faculty of Education, Nakhon Ratchasima Rajabhat University, which can support the users group, i.e. system administrators and system users, which can manage documents related to the quality assurance work in advance, before the quality assessment from the board or before the CHE QA Online system will be activated, results in the boards being able to consider the information or documents in advance before the assessment date, as well as the ability to copy the Link to use in the CHE QA Online system easily. This corresponds to the Chanakrit Mitsongkroh et al. [8] that has developed the collection of educational quality assurance documents in Kanchanaburi Rajabhat University. The result is that the data file is stored in an electronic document format, making it fast, convenient. storing documents in an orderly manner, easy to find documents, control system usage rights. Moreover, the system is developed according to the concept of Responsive Web Design in accordance with Anuphon Singkhonkhet et al. [4] who developed the quality assurance system in the online course level. Therefore, the case study of the Faculty of Management Science in Rajabhat University Rajabhat University can be used with all devices.

B. Assessment of System Performance

The results of the assessment of the system performance by experts in information system

development, the overall is at a very good level ($\bar{x}$= 4.59, SD = 0.48) in line with the Chanakrit Mitsongkroh et al. [8] that experts assessed the performance of the document quality assurance system in education in Kanchanaburi Rajabhat University, that the overall is at the highest level ($\bar{x}$= 4.67, S.D. = 0.25). When considering each area, it was found that the area with the lowest score was the Performance test of the system ($\bar{x}$= 4.40, S.D. = 0.52). In this area, there is an assessment of file upload and deletion speed, display speed, link speed for each menu, and the speed of opening files or downloading documents. The speed of system processing is from many elements, such as the performance of programming, the network that the experts use, the campus server, and the tools used to access the system while assessing system performance. In this area, there are questions that get the lowest score, namely the speed of opening files or downloading documents. When having additional interviews, experts see that downloading documents must be clicked many times, so the download button should be displayed in the document list so that it can be downloaded immediately without clicking the button to expand the list for finding the download button.

CONCLUSION

Online document file management system to support educational quality assurance, Faculty of Education Nakhon Ratchasima Rajabhat University can be used as a tool to manage document files very well, with accurate processing, easy to use system, secure and prevent errors from working. However, the researchers have suggestions for development, that is, there should be an assessment of system satisfaction for all users in order to improve the system to be more efficient, including to extend the results to be able to use at the course level, so that the system can be linked to the faculty level more systematically.

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