THE DEVELOPMENT OF ALUMNI INFORMATION DATABASE AT COLLEGE OF MUSIC, MAHASARAKHAM UNIVERSITY

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ABSTRACT
The objectives of this research are 1) to develop the alumni Information database at College of Music Mahasarakham University. 2) to disseminate the alumni Information database at College of Music, Mahasarakham University through digital media and 3) to assess the quality of the alumni Information database at College of Music, Mahasarakham University. The respondents in the research are divided into two groups: those who graduated from the music department in the Faculty of Fine and Applied Arts; and from the College of Music, Mahasarakham University during the 1997-2019 academic year, and those involved in the use of alumni information. The research tools used in this research are 1) Information suitability assessment form and 2) alumni information database quality assessment form. The statistics computation used in the research is the Mean and Standard Deviation.

The results of the research are as follows: 1) The alumni information database at College of Music, Mahasarakham University is fully functional. For the administrator, the following are the main concerns: registration, registration approval, browsing member information, searching for information, editing and updating information on the main page, providing information, press releases, and assigning member rights and other capabilities designed by the system. For the users — logging in to add information, revision of personal information, search for publicly displayed information, and all other uses that the system has designed. 2) The alumni information database at College of Music, Mahasarakham University is published as a database system on the university server and a link is provided to access the database through the College of Music Mahasarakham University official website. 3) The assessment by experts in information technology systems and by users of the system in seven areas are based on the following: currency, content and information, authority, navigation, security and privacy, data and statistics reporting, practical use, and others. The quality assessment was found at a very good level at >4.50 in all aspects.

Keywords: alumni, information system, database

I. INTRODUCTION
Mahasarakham University has opened a Music course by starting to accept students in Bachelor of Arts, Music Major under the Department of Music, Faculty of Fine and Applied Arts for the first time in 1997. Then, a music major is divided to be a College of Music to provide teaching and learning music and continually improve the course development, and to create graduates who have knowledge and expertise in the music professions, including Thai music, folk music, and western music, and to pursue careers in various professional fields (College of music, 2017).

The quality of higher education programs affects the quality of graduates in the programs. These affect the various qualities of Courses such as curriculum drafting, human resources, and other resources in the curriculum. Following the quality insurance principle in higher education, Curriculum improvements must focus on those involved in all sectors, especially alumni, employers, and related professional organizations (Mic and Jankovic, 2012). To administer courses under the National Qualifications Framework for Higher Education (TQF) (Office of the Higher Education Commission, 2009) and according to the standards for undergraduate and post-graduate programs (Ministry of Education, 2015); to improve and develop the curriculum to be up-to-date and meet the
needs of market requirements; all rely on information about alumni or graduates to be considered as part of the decision-making of the management or the persons responsible for the relevant work. Information of alumni including personal information, occupation, comments, suggestions, or other relevant information from both graduates and graduate users that are up-to-date is important in considering the improvement and development of the direction of curriculum and teaching management to create the graduates in the program to meet the needs of graduate users.

Formerly, the College of Music has created a database of alumni in a document format which, after data collection, does not be up-to-date information including documented data can be difficult to retrieve and prone to lose. In the modern era, the role of information technology in the globalization era, so the distribution of information is possible rapidly in all directions, affecting the social, economic, political, and educational changes of various countries (Tungteerabunditkul, 2015). Internet users can access information easily, quickly, and at all times. Therefore, the researcher has the concept in the preparation of alumni information database in the Internet system with the availability of information for use in the mission of the section and communication between alumni. Members may amend their information at any time to be current, up-to-date, and sufficient to provide reference or decision-making by the administrators or those involved in the administration of the various missions of the College of Music and the University effectively.

Research objectives

1 to develop the alumni Information database at College of Music, Mahasarakham University,

2 to disseminate the alumni Information database at College of Music, Mahasarakham University through digital media

3 to assess the quality of the alumni Information database at College of Music Mahasarakham University.

II. LITERATURE REVIEW

According to Ashenfelter, database systems generally mean collecting detailed records related to things together. In practice, this means combining data systematically (Ashenfelter, 1999). It corresponds to Kanchit Malaiwong who defined the database as is gathered correlated information that organized into categories for easy research (Malaiwong, 1995).

The type of database, if it is classified according to the purpose of the database arrangement, can be divided into two types: 1) Reference Database is a database that can provide information to the desired data source. This type of database does not contain full information but will be in the form of an index or a summary. 2) Source Database is a database that provides information or content directly, which are numbers or text (Premsmith, 1995). If it classified according to the type of the data, databases can be divided into four types: 1) Bibliographic Database: reference lists of articles, journals, books, and other documents by specifying the title, author's name, and abbreviated content; 2) Factual Database, such as the sections' directory, research project, is information that is kept up-to-date; 3) Full-text Database contains the entire contents of the document; and 4) Numeric Database is a database that collects numerical and statistical data (East and Harry, 1986).

If it is divided according to the form of the database, it can be divided into three types: 1) Information Resources Database is done by the organization that owns that information to facilitate the search for that information. Whether it is a book, journal, book, various media, thesis, etc., such as the OPAC (Online Public Access Catalog) system; 2) Offline database, i.e. a CD-ROM database provided by information organizations can store a lot of text, picture or sound. 3) Online database is a database that can be accessed in different places by the Internet (Waranyanukrai, 2002).

Charaneet Kaewkangwan discussed the characteristics of a good database, which can be summarized as follows: 1) it can be able to present and respond to the user needs of the system; 2) The user can retrieve the information in various appropriate ways; 3) There is a control over the operation of the data storage unit in the system; 4) Data and programs are independent of each other, and 5) It has integrity and reliability. (Kaewkangwan, 1993).

Opas Iamsiriwong said that there are seven steps in the development cycle of a database system, namely 1) determining problem, purposes, and aims; 2) determining user information needs; 3) system analysis; 4) system

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design; 5) development software and documentation; 6) testing and system maintenance; and 7) operation and processing (Iamsiriwong, 2012)


Jirapong Prompakdi studied “the development of alumni information system at Ubon Ratchathani Rajabhat University through the internet network system”. The purposes were to develop an alumni information system at Ubon Ratchathani Rajabhat University and to find the efficiency of an alumni information system at Ubon Ratchathani Rajabhat University. The developed system is designed to be able to log in, change the password, edit, and delete information. After developing the system, the system was tested by experts and system assessment. The results of the research were: 1) alumni information system at Ubon Ratchathani Rajabhat Rajabhat University through the Internet network system can administer and manage the alumni system information from the process of login, add information, edit information, change password, notify related news, search for alumni members until the end of the process, print report, data retrieval, online questionnaire, and exit of the alumni system. 2) The results of the program efficiency evaluation by experts had an average of 4.29, at a good level, and the efficiency evaluation results by members who use the system were averaged 3.76, at a good level (Prompakdee, 2011).

Chayanti Nunthawong and Nicha Napaphorn Jongkasikit studied on “the development of alumni information system at Nakhon Sawan Rajabhat University”. The objective was to develop an alumni information system at Nakhon Sawan Rajabhat University by using computer questionnaires to develop software systems. The research starts from the study of the problem and system requirements, system analysis, and system testing development and conclusions. The results showed that the sample had a satisfaction level of 3.77, indicating that the sample was satisfied with the alumni information system at Nakhon Sawan Rajabhat University is at a high level (Nantawong and Jongkasikit, 2009).

Thipawan Saenkham studied “the development of alumni website at Buriram Rajabhat University.” The current state of alumni information at Buriram Rajabhat University had to collect documented information which made it difficult to search and time-consuming. Alumni website development research has two stages of operation as follows: 1) Alumni website development at Buriram Rajabhat University to study in detail the information recorded in the database on the website; 2) to study the satisfaction of visitors to the alumni website in an experimental and survey forms to study user opinions the alumni database system website. The researcher conducted qualitative research that emphasized the importance of the opinions of the key informants that were Alumni club committee and alumni members to classify and organize information, analyze and design the system accordingly to the System Development Life Cycle Method (SDLC). System development with development programs includes MySql database manager, PHP system development program, and Joomla program (Saenkham, 2017).

Vikas BO and Gaddam Jaithra Reddy studied “Alumni Association: A Full-Fledged Information System”. It aims to create a web-based system to store current student and alumni information. Since the original storage system was a document system where data could be lost, communication between current students and alumni can create visions and guidelines for current students in education. The system is designed to be easy to use, in which the alumni database can log in to add information to the system. Students must register in the form provided and, after graduation, current student information can be changed to information in the alumni section (Bo and Reddy, 2020).

Bakioglu et al. collected data from 142 volunteers who were graduates of the Faculty of Education, Marmara Ataturk University. Survey data indicates that graduates need a follow-up system, a career planning unit, and an alumni association which may be communicated via the website to guide juniors, to increase employment opportunities, and to share work and career experiences. Recommendations will produce results more efficiently (Bakioglu et al., 2011) is consistent with Harvard University that provides the alumni system website. The homepage of the website contains links to different parts of the website that are related to the alumni. The information is provided to promote news and upcoming events through the page as well as links to various social media of the Harvard University Alumni Association. In use after logging in, alumni will be able to communicate...
with alumni and current students. This is beneficial to both alumni and current students of the Institute (Harvard University, 2020)

III. RESEARCH METHODOLOGY

Development of alumni information database at College of Music, Mahasarakham University, the researcher has followed the research methodology as described in the key steps below.

1. To study the basic information and Literature review: to study the preliminary data from the student database of Mahasarakham University, to study the current state of the music alumni data collection, Mahasarakham University, and to study from research and documents related to the creation of alumni information database. After that, the researcher had conversations with target groups, including alumni, administrators, staff of the College of Music. The staff of the university's alumni division and staff of the quality assurance department, as well as using the researcher’s experience as a quality assurance assessor, the ex-chairman at Music Alumni Club, Mahasarakham University, and the administrator of this institute.

2. To determine the concept of creating an alumni database and research design: the researcher has a research conceptual framework that is creating an alumni information database with the availability of information for use in the mission of the organization and communication between alumni. Members can amend their information at any time to be current, up-to-date, and sufficient to provide information for reference or decision-making by the administrators or those involved in the administration of the various missions of the College of Music and the University, effectively. The research sample was divided into two groups, namely those who graduated in the music major under the Faculty of Fine and Applied Arts and from the College of Music, Mahasarakham University during the academic year 1997-2019, and those who are involved in the use of information, alumni.

The scopes of content in the alumni information system are as follows: 1) Information topics appearing on the Homepage of the alumni website 2) Personal information of alumni 3) Contact information 4) Information on admission to study at Mahasarakham University 5) Educational information after graduating from music major, Mahasarakham University 6) Working information and promotion 7) Awards or honors.

3. To develop the research tools: the research tools of the alumni information database development at the College of Music, Mahasarakham University, are included three assessment forms, namely 1) the assessment form of the questions corresponds to the research objectives (IOC); 2) the assessment form of the appropriateness of the information topics in the Alumni Information Database; and 3) Alumni Information Database Quality Assessment Form.

4. Information database design by assessing the consistency of the questions with the research objectives (IOC), and assessing the appropriateness of the information topics in the alumni information database, and bring the topic of information that passed an assessment to design an information database.

5. To develop an information database and test it: Developing an information database using MySQL database management program, PHPMyAdmin4 database management system, Visual Studio Code 1.55.2 program with programming languages used for development such as PHP HTML BootStrap4 JavaScript and PhotoScape X image editing program. The alumni information database can be divided into searching sections, adding information, Correction, update of information, and provision of press releases to users of the system. The function of the system can be divided into three parts: 1) Administrator can view member information, search information, approve the registration, add or remove members, edit information on the homepage, provide information, press releases, and set member permissions. 2) Users can log in to add information, correction of their information, search for information in the system that is publicly displayed. 3) Visitors can register for alumni membership, follow news and search information of members that is publicly displayed.

Development of alumni information database has limited access rights in the system as follows: 1) Administrator: the system administrator can create user accounts for administrator, appoint a caregiver, approve the member's registration, reset the member's password, browse members' information, search information on the page, amend or delete the information on the first page, providing information, press releases, assign membership rights and use other functions available in the system. 2) User: Alumni members or system users can register to become
members, amend their account information, edit their password, access members, and be able to see their public information, read the news and use all available pages in the system.

There are two parts of the system experiment: 1) Administrator creates a user account for admin and runs the experiment to retrieve member information, approve the registration, access information, amend, update or delete information on the homepage, delete information and provide press releases, set member permissions, and try to access the web page from the home page in different sections. 2) Alumni members or system users: after creating a system and saving the information of alumni members provided from the alumni history record into the information system, there will be publicity for alumni to log in to make additional experiments, amendments, and improvements to their information, find information that is publicly displayed, and try to access the webpage from the homepage in different sections.

6 Alumni information collection: the researcher collected the data in two steps as follows: 1) gathered from Alumni information from the university's student profile registration system, and 2) gathered from collecting additional information from alumni by creating a user account for alumni members and publicize the alumni into the system to amend the information to be complete and up-to-date.

7 To disseminate information database by bringing the alumni database system to the server of the Mahasarakham University and linking access to the database system through the official domain of the College of Music, Mahasarakham University, that is https://music.msu.ac.th/alumni/.

8 To evaluate the quality of information databases: The quality of the information database was assessed by information technology experts and alumni information database users by applying Everhart's Web Information Assessment Guidelines (Nilsuk, 2003) on specific issues related to the Alumni Information Database as follows:

1 Currency is determined from the alumni information database. Information is always up-to-date, showing the last updated date and time. Information is constantly being updated, both from moderators and from user feedback, and access statistics are also displayed.

2 Content and Information is considered from the following assessment topics:

   2.1 The objectives of creation in the system must be clear.

   2.2 The content must be accurate and match the objectives of the alumni information database creation.

   2.3 The information system must be useful for the users.

   2.4 Content, language in the system, must be arranged elaborately and correctly.

3 Authority is considered by the organizer as a relevant person, a responsible person, or an expert on the subject or information, including the name of the author. The copyright of the information is displayed on the website. It shows the name of the webmaster, the position of the information provider, relevant contact information, responsible person, and showing the address of the institute website owner. It can specify the following topics for assessment:

   3.1 System and information in the alumni information database must be reliable.

   3.2 Domain name must be appropriate corresponding to the alumni information database and the institute of the system.

4 Access: browsing and accessing information is considered from the following topics for assessment:

   4.1 Users can access the system and information quickly.

   4.2 Users can brow the information of alumni conveniently.
Security and Privacy are considered from alumni members who can see public information of members, only administrators can manage, edit members and see non-public information of alumni members. Members can choose to hide or display sensitive personal information. Topics for assessment are as follows:

5.1 Alumni information database is secure in important information.

5.2 Appropriate access rights are set.

6 Report: reporting data and statistics are considered from the following topic for assessment:

6.1 The system provides various important statistics reports.

7 Useful and others: actual usage and so on is considered from the following topics for assessment:

7.1 The system can be operated easily and conveniently.

7.2 The system design is appropriate and beautiful.

IV. RESEARCH RESULTS

1 Results of the development of alumni information database at College of Music, Mahasarakham University

The alumni information database at the College of Music, Mahasarakham University has designed various components as shown in Figure 1.

![Diagram of alumni information database](image)

**Figure 1**: Design of the first page of the alumni information database

Figure 1 shows the design of the first page of the Music Alumni Information Database, Mahasarakham University, can be divided into six main parts:

1) The main menu consists of the home page menu about alumni, Batch number, Alumni committee, Alumni works, Facebook alumni, Alumni registration, Download, Contact us, Related Links, Search for alumni, Button for login.

2) The sub-menu is in the lower-left area. It includes a user manual, search box for information in the system, visiting statistics, and a channel for comments and suggestions of users to the administrators.

3) The upper display section shows the public relations banner.

4) Shortcut menu section shows shortcuts to register alumni and for placing other shortcut menus in the system.
5) Main display section shows information about the Music Alumni Club, Mahasarakham University, the purpose of creating an alumni information database, and the organizing committee. The next level shows press releases, job announcements, and related links, including the social network of the College of Music such as Facebook, Twitter, Instagram, Tiktok, and Youtube.

6) Footer display section shows copyright notice, and the last update as shown in Figure 2, is the first page of the alumni information database.

![Figure 2: The first page of the alumni information database.](image)

In the function part of the database system, the researcher has set the rights in the system as follows:

1) Administrator can create user accounts for administrators, appoint a caregiver, approve the member's registration, reset the member's password, browse members' information, delete members, search the page, edit, update or delete information on the home page, provide information, press releases, assign members' rights, and use other available functions in the system.

2) Users can register as a member, amend their account information, edit their password, search for members, and be able to see their public information, read information, and use other available functions in the system.

3) Visitors can register to become alumni members, follow the news and search the member information displayed publicly and other available functions in the system.

The topics of alumni information that will appear in the information database are detailed in the following order.

1) Alumni personal information consists of the identity picture, name-surname (Thai), name-surname (English), brief introduction information, ID card number, address according to the national ID card (domicile), current address that can be easily contacted, race, nationality, and other people who can be contacted in case of emergency.

2) Contact channels consist of e-mail, a phone number that is convenient to contact, Line ID, Facebook, and other contact channels.

3) Information on admission to Mahasarakham University consists of the first academic year, first semester, Student ID, campus, course of study, major of study, pre-entry qualifications, name of institute or school, name of a province, admission cycle, and the reason for choosing to study/referent.

4) Educational information after graduating from the College of Music, Mahasarakham University, consists of the continuing education after graduating from Mahasarakham University.

5) Working experience or promotion consists of the activity/working experience during a study in University and working experience after graduation.
6) Honor or Awards consists of the names of awards, honors during the study, names of awards or honors after graduation from Mahasarakham University, and important works (projects, activities, research, etc.).

The results of disseminating the alumni information database at the College of Music, Mahasarakham University

After the development of the system, the researcher has tested the system in the admin section and the user section to find system errors, fix them, and make them work effectively before publishing as follows: 1) Administrator creates a user account for administrators and conduct an experiment to browse member's information, approve the registration, search for information, modify, update or delete information on the homepage, delete information, provide press releases, set member permissions, and try to access the webpage from the home page in different sections. 2) Users log in, add, amend, and update their information, find information that is publicly displayed, and try accessing the webpage from the home page in the different sections.

The researcher has published the database by uploading the database system to the server of the university and link to access database system via domain https://music.msu.ac.th/alumni and then link from the official website of the College of Music, Mahasarakham University that can access the database Alumni information from the menu "Information System", the sub-menu "Alumni Information Database" as shown in Figure 3.

![Figure 3: Links to the Alumni Information Database](image)

3. The results of the quality assessment of alumni information database at College of Music, Mahasarakham University

Evaluation of the alumni information database at College of Music, Mahasarakham University, the researcher applied from the Everhart Assessment Guidelines (Nilsuk, 2003) that are divided into two parts: evaluation Information technology by the experts and evaluation by users of the system. The statistics were used in the research, namely, mean () and standard deviation or S.D. The researcher set the scores for quality assessment into five levels: level 5, very good quality; level 4, good quality; level 3, moderate quality; level 2; low quality; and level 1, very low quality. The mean of the quality assessment scores was defined as the mean 4.51-5.00, very good quality; the mean 351-4.50, good quality; the mean 2.5-3.50, medium quality; the mean 1.51-2.50, low quality; the mean 1.00-1.50, very low quality; and the evaluation results are shown in Table 1.

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1. The system is constantly upadating information to be up-to-date.  5.00  0.00  4.67  0.57

Total  5.00  0.00  4.67  0.57

2. Content and Information
2.1 The objectives of system creation are clear.  5.00  0.00  4.67  0.54

2.2 Contents must be accurate and match with the objectives
of the alumni information database creation.  5.00  0.00  4.73  0.48

2.3 The Data in information system is useful for the users.  5.00  0.00  4.75  0.51

2.4 Contents and languages in the system are arranged elaborately and correctly.  4.67  0.58  4.73  0.48

Total  4.92  0.29  4.72  0.50

3. Authority
3.1 System and data in alumni information database are reliable.  5.00  0.00  4.78  0.49  3.2

Domain name is appropriate and consistent with the Alumni information database and the university  5.00  0.00  4.75  0.51

Total  5.00  0.00  4.77  0.50

4. Access
4.1 Users can access the system and information quickly.  4.67  0.58  4.70  0.50

4.2 Searching information of alumni is possible easily.  4.67  0.58  4.67  0.54

Total  4.67  0.52  4.68  0.52

5. Security and Privacy
5.1 Information database is secure for important information.  5.00  0.00  4.58  0.62

5.2 Access right is set appropriately.  5.00  0.00  4.65  0.58

Total  5.00  0.00  4.62  0.60

Table 1 (Continued)

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6. Report
6.1 The system provides various important statistics reports.  5.00  0.00  4.63  0.58

Total  5.00  0.00  4.63  0.58

7. Useful and others
7.1 The system can be operated easily and conveniently.  5.00  0.00  4.68  0.54

7.2 The design of the system is appropriate and beautiful.  5.00  0.00  4.63  0.58
Table 1 found that the assessment results from information technology system experts and system users in all seven aspects, namely, currency, content and information, authority, access, security and privacy, data report, and useful and others in all aspects, the quality assessment was at a very good level ($\bar{x} > 4.50$) in all assessment topics.

V. RESULTS DISCUSSION

For the alumni information database system, the researcher aims to have properties that are close to the characteristics of a good database, as Joraneet Kaewkangwan has stated in the book “Database design and information management” (Kaewkangwan, 1993), which the alumni information database system is a system where alumni members can add and edit their personal information up-to-date, high privacy in data retention, especially in important information that members can choose whether to be displayed publicly or only to data subjects and moderators. It can be discussed as follows:

1) Results of the development of the alumni information database at College of Music, Mahasarakham University found that if it is divided according to the purpose of preparing the alumni database will be in the Source Database category. If it is divided by type of data, it will be in the Factual Database category or if it is divided according to the form of the database, it will be classified as an information resources database category. The alumni information database can be fully functional under the research conceptual framework and according to the capabilities of the designed system. It helps to collect the systematic storage of alumni information and increases convenience for both alumni members and users of alumni's information to collect and use information. It can be beneficial to the mission of the College of Music in terms of quality assurance, course development, and activities of the alumni club.

2) The results of disseminating the alumni information database at College of Music, Mahasarakham University through digital media. The alumni information database is published by uploading to the Server of Mahasarakham University link access to the database system through the official domain of the College of Music, Mahasarakham University. It found that access to the information database is easy and fast.

3) The results of the quality assessment of the alumni information database at College of Music, Mahasarakham University found that the evaluation results from information technology system experts and the evaluation results from users of the system in seven areas, namely the current content and information, reliability, search and access to information, security and privacy, data reporting and statistics, and actual use and others. It found that the quality evaluation results are very good ($\bar{x} > 4.50$) on all sides.

Recommendations

College of Music, Mahasarakham University should allocate staff with responsibility for system administration, and update information in the system up-to-date. There should be measures and methods to encourage and attract alumni to amend and update their information to keep it up-to-date. Nowadays, people with various social media accounts may link the alumni information database to those social media, so that members who already have social media accounts do not feel burdened with additional access to their various information in the information system. There should be encouraged to organize group activities of alumni regularly. Whether it is an alumni homecoming event or other activities that attract alumni members to keep in touch with each other and with the institute.

In public relations about the system, it may take the opportunity to participate in the farewell activity, and on the occasion of graduating, they came back to attend the graduation ceremony to introduce the system and ask alumni to fill out additional information to be up-to-date, as well as publicize the alumni about the purpose of creating the system, benefits that will be obtained from the system, including public relations, and persuade alumni to add personal information to be always up-to-date.
REFERENCES