

Improvement of Data Management to Support Educational Quality Assurance of a Faculty in University Using Digital Platform of Microsoft Teams

Jaranya Sangthong, King Mongkut's University of Technology Thonburi, Thailand
Wisitsree Wiyaratn, King Mongkut's University of Technology Thonburi, Thailand
Suchapa Netpradit, King Mongkut's University of Technology Thonburi, Thailand
Opas Vongwongruk, King Mongkut's University of Technology Thonburi, Thailand

The Asian Conference on Education 2023
Official Conference Proceedings

Abstract

The educational quality assurance (QA) is the management and operation of universities to continuously improve the quality of students and graduate students. The purpose of this study is to improve the data management process for QA of the Faculty of Industrial Education and Technology, King Mongkut's University of Technology Thonburi, Thailand by using the Microsoft Teams. The principle of SIPOC model had been applied for brainstorming and gap analysis, showing that the main problem was an inefficiency in data management including data collecting, organizing, and accessing. The conventional process of information preparation was performed by requesting cooperation from relevant parties which was complicated and delayed, causing lately report submission as requirement. The process for data management of QA was then improved by analysis of data source, type, sequence, period, and connection before redesign using the Microsoft Teams platform. The channel of data collection was communicated with involved administrators to understand and access easily. There was also notification system for staffs to store information at the appropriate time by setting in the google calendar. The results have been follow-up by evaluating the satisfaction of users to the improved system using online questionnaire with 5-scale, showing that the system was good with the mean score of 4.1. The results of this study could enhance the systematic management of data collection, quickly and easily to find the information, reducing the process of QA report preparation. In addition, this procedure could be a good guideline for other practices of the faculty.

Keywords: Microsoft Teams Platform, Quality Assurance, SIPOC

iafor

The International Academic Forum
www.iafor.org

Introduction

IQA stands for Internal Quality Assurance (IQA). IQA is the process of ensuring that the learning and qualifications in an educational environment, meet agreed quality standards. The aim of Internal Quality Assurance is to ensure that assessment practices are consistent, fair, and reliable. They need to result in valid and accurate assessments of learners' knowledge, skills, and understanding. IQA is an important component of the overall quality management system in the education and training sector. The job of the IQA is to oversee the quality assurance process of an organizations training program. The IQA is responsible for making sure that all the training delivered meets the necessary standards. These standards are set by both the training provider and awarding body. The IQA is also responsible for making sure that the assessors and trainers within the organization are trained to the required standards. This would be the organizations 'Lead IQA'. This role is also known as a Centre Lead or Quality manager. The specific job duties of an IQA may vary depending on the organization, but generally, an IQA's job may include the following: 1. developing and implementing quality assurance systems and processes. 2. ensuring that assessors and trainers are using valid and reliable assessment methods and techniques. 3. Monitoring the assessment practices of assessors and trainers to ensure they are consistent and fair. 4. Providing feedback and support to assessors and trainers to improve their assessment practices. 5. Reviewing assessment decisions to ensure they are accurate and valid. 6. Ensuring that all assessment practices are compliant with relevant policies, procedures, and regulations and 7. Maintaining accurate records and documentation of all quality assurance activities [1].

The Ministry of Higher Education, Science, Research, and Innovation (MHESI) has decided to endorse a guide for the examination of educational curricula and the inspection of educational operations to ensure the accreditation standards of higher education programs. This approval applies to both higher education institutions and the Office of the Permanent Secretary, Ministry of Higher Education, Science, Research, and Innovation. The Higher Education Quality Improvement Division (HEC) has developed an inspection manual for educational curricula and the assessment of educational operations to certify higher education standards. This curriculum is intended for higher education institutions in Thailand and is meant to serve as a guide for preparation in designing an educational curriculum that emphasizes learning outcomes and effectively meets the needs of stakeholders [2].

King Mongkut's University of Technology Thonburi (KMUTT), which operates under the jurisdiction of the Ministry of Higher Education, Science, Research, and Innovation (MHESI), is mandated to utilize a manual for the examination of academic programs and the inspection of management operations in studies. This manual serves as a guide for curriculum development and implementation at KMUTT. KMUTT has adopted a comprehensive policy with a primary focus on assessing the quality of its academic programs. The internal quality assurance for these programs involves two distinct criteria. The first criterion addresses a standardized approach to curriculum control, while the second criterion emphasizes standardized guidelines for curriculum development. Both of these criteria are overseen by the Ministry of Higher Education in Thailand.

The Faculty of Industrial Education and Technology at KMUTT offers a total of 16 programs, comprising 8 bachelor's degrees, 7 master's degrees, and 1 Doctor of Philosophy. Each program undergoes a rigorous quality assurance process to ensure adherence to standards and consistent quality. Programs are required to prepare a self-assessment report known as the 'Course Tracking Report' to report on course performance. These reports are

then submitted to the Educational Development and Services Office (EDS) at KMUTT—a central unit that supports the university's educational development. This unit collaborates with other departments, namely the Faculty Development Department, Teaching and Learning Development Department, and Organizational Development Department, to coordinate and manage educational development activities. In the course of quality assurance, there is a need for effective information exchange among various departments within and outside the faculty. A communication channel is established to facilitate the request for various documents necessary for compiling a comprehensive course follow-up report.

Based on the findings from previous operations, it was identified that the process of collecting documents and evidence for preparing the Course Monitoring and Review (CMR) report lacked systematic organization, and there was insufficient planning for data collection over time. This resulted in incomplete information. Additionally, the coordination in requesting information from various departments within the Faculty was slow, leading to delays in submitting CMR reports. These challenges have posed difficulties in meeting the quality assurance standards set by the authorities. The primary issue lies in the inefficiency of data management, encompassing both the collection and organization of data, as well as accessing information. The traditional data preparation process relies on complex and delayed cooperation from relevant parties. In the realm of higher education institution quality assurance operations, a more effective system is needed to facilitate document storage, prevent data loss, and eliminate delays in document retrieval or searching [3].

Consequently, this research aims to achieve two objectives to enhance educational quality assurance: to improve educational quality assurance, such as using digital platforms to improve educational quality assurance. And to increase the efficiency of educational quality assurance by planning data collection and data analysis of the Faculty of Industrial Education and Technology King Mongkut's University of Technology Thonburi.

Methodology

The methodology for this research involves a systematic approach to enhance the curriculum monitoring reports process within the Faculty of Industrial Education and Technology at King Mongkut's University of Technology Thonburi. The methodology consists of several key steps:

Step 1: Study of Operational Issues using the SIPOC Model

In this initial step, the SIPOC (Suppliers, Inputs, Process, Outputs, Customers) Model is employed to examine operational challenges and identify key elements and stakeholders in the curriculum monitoring reports process. For this research, Suppliers were Faculty Staff, Lecturers and Administrators.

1. Inputs were the correct and complete data such as the number of Lecturer's research, the number of students, Satisfactions of stakeholder, and more.
2. Process, Output was the center of quality assurance system.
3. Customers get the benefit of the quality assurance system.

Step 2: Study and Analysis of Main Document Data for Curriculum Monitoring Reports

This step involved a thorough study and analysis of the main document data required for the Curriculum Monitoring Reports. The focus was on understanding the necessary information based on the curriculum criteria set by the Ministry of Higher Education, Science, Research, and Innovation.

Step 3: Planning for Data Collection for Curriculum Monitoring Reports

A detailed plan for the data collection process is developed, ensuring connectivity with all departments within the Faculty of Industrial Education and Technology. Timeframes are defined to facilitate timely and comprehensive information gathering.

Step 4: Creating the System for Data Storage in Folders using Microsoft Teams Platform

This step involved the design of folders and structures for a dedicated data storage system for educational quality assurance. The Microsoft Teams platform is chosen for its accessibility and user-friendly features, aligning with quality assurance requirements.

Step 5: Conducting the Meeting for Information Dissemination

A meeting is organized to disseminate information to academic and supporting staff. Clear instructions are provided on the utilization of the new system.

Step 6: Implementing the Data Collection in Microsoft Teams

The data collection process is initiated within the Microsoft Teams platform according to the designed plan. Relevant personnel are guided and encouraged to actively participate in the data collection process.

Step 7: Evaluation of Satisfaction from Users

In this step, we will assess user satisfaction with the improvements made in data management to support educational quality assurance within a university faculty. The digital platform chosen for this purpose is Microsoft Teams.

Table 1: The contents for satisfaction evaluation in Questionnaire

Main Topics	Sub-topics
Data Access in System	<ul style="list-style-type: none">- Information Dissemination for System- Understanding of System Operating- Easy and Convenience in Data Access
Usage of the Data Storage System in MS Teams	<ul style="list-style-type: none">- Folder Setting and Providing for CMR- User-Friendliness of Platform- Systematic and Useful of Data- Efficiency Enhancement in Work Operations- Step Reduction for Information Request- Overall Satisfaction on Data Storage System

7.1 Statistical Measures Used for Evaluation:

7.2 Data Analysis Procedures:

7.2.1 Analysis of Survey Data:

Calculating the mean (\bar{x}) and standard deviation (SD) for quantitative analysis.

7.2.2 Scoring Based on Boonchom's Concept (2013):

Evaluating responses according to Boonchom's framework, where scores are assigned on a scale of 1 to 5, representing the levels of excellence, high satisfaction, moderate satisfaction, low satisfaction, and the lowest satisfaction, respectively.

7.2.3 Interpretation of Satisfaction Levels:

Interpreting the analysis results based on user satisfaction criteria:

Mean scores of 4.51–5.00 indicate the highest satisfaction.

Mean scores of 3.51–4.50 indicate high satisfaction.

Mean scores of 2.51–3.50 indicate moderate satisfaction.

Mean scores of 1.51–2.50 indicate low satisfaction.

Mean scores of 1.00–1.50 indicate the lowest satisfaction.

Results

Following this, Microsoft Teams was a tool for monitoring and follow-up for essential information encompassing financial data, policies, both current and graduated student information, research outputs from faculty members and students, and stakeholder satisfaction. Data from these aspects is collected from eight distinct groups, ensuring that it remains current and prepared for thorough analysis. The eight groups contributing to this comprehensive dataset are shown in Figure 1: Financial Group, Strategic Planning and Policy Group, Education Service Group, Academic Service Group, Human Resources Group, Quality Assurance Group, Student Development and Organizational Communication Group, and Research Group. This utilization of Microsoft Teams served to streamline communication, facilitate collaboration, and ensure that all relevant information was readily available for efficient decision-making and strategic planning within the research framework, as shown in Figure 1.

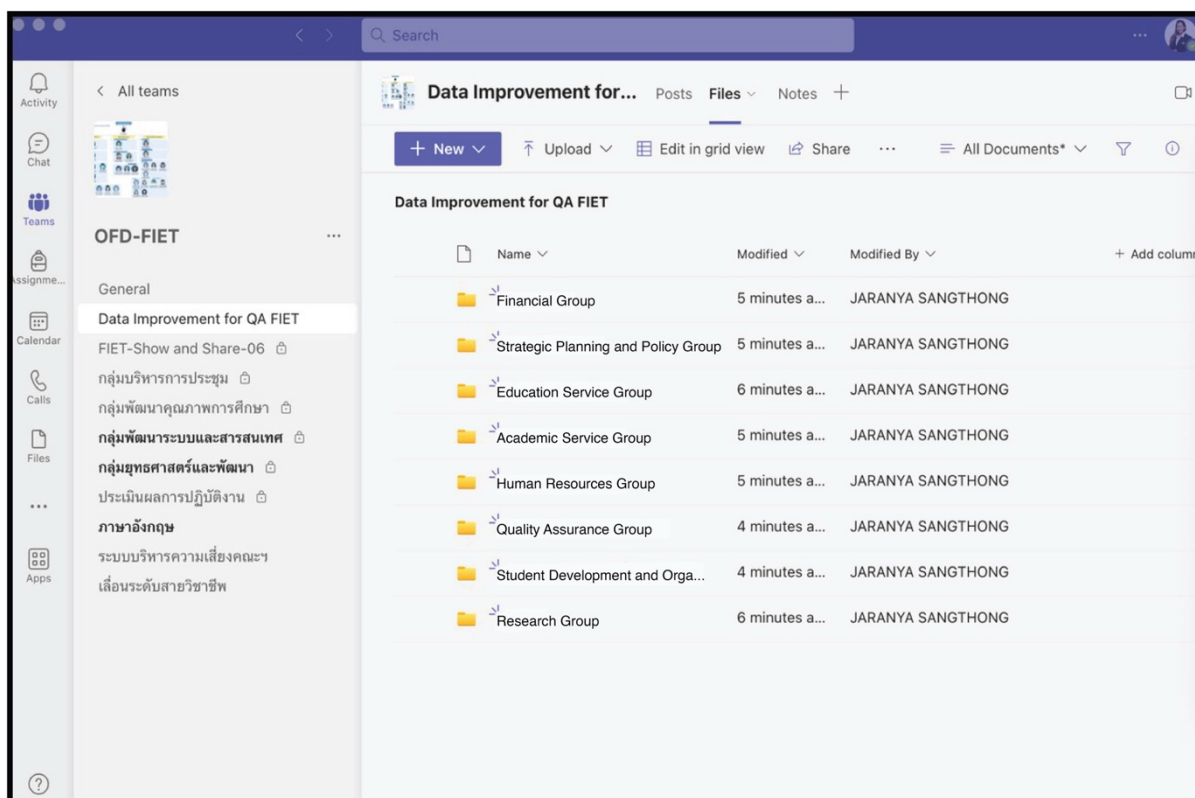


Figure 1: The Data Collection in Microsoft Teams from 8 Groups

Based on the satisfaction survey study on the improvement of Data Access in System to support educational quality assurance within a faculty at the university, utilizing the digital platform of Microsoft Teams, the research findings are summarized in Table 2.

Table 2: The Result Evaluate System Quality by Users for Data Access in System (N=20)

Data Access in System			
Title for evaluation	\bar{x}	S.D.	Level of Satisfaction
1. Information Dissemination for System	3.95	0.59	High
2. Understanding of System Operating	4.24	0.44	High
3. Easy and Convenience in Data Access	4.43	0.68	High
Overall Average Evaluation Result	4.21	-	High

The results revealed a heightened level of satisfaction across multiple dimensions, encompassing information dissemination, understanding of system operation, and ease of data access. The cumulative average evaluation result of 4.21 substantiates the conclusion that the implemented enhancements in data management through Microsoft Teams had significantly and positively influenced user satisfaction within the educational quality assurance framework. This indicated a successful integration of the digital platform in meeting user expectations and improving overall system quality in the academic setting.

Based on the satisfaction survey study on the improvement for Usage of the Data Storage System in MS Teams to support educational quality assurance within a faculty at the

university, utilizing the digital platform of Microsoft Teams, the research findings are summarized in Table 3.

Table 3: The Result Evaluate System Quality by User for Usage of the Data Storage System in MS Teams (N=20)

Usage of the Data Storage System in MS Teams			
Title for evaluation	\bar{x}	S.D.	Level of Satisfaction
1. Folder Setting and Providing for CMR	4.22	0.62	High
2. User-Friendliness of Platform	4.86	0.36	Highest
3. Systematic and Useful of Data	4.57	0.6	Highest
4. Efficiency Enhancement in Work Operations	4.38	0.5	High
5. Step Reduction for Information Request	4.52	0.51	Highest
6. Overall Satisfaction on Data Storage System	4.33	0.48	High
Overall Average Evaluation Result	4.44	-	High

The results for the evaluation of the data storage system in Microsoft Teams demonstrate a high level of satisfaction among users across various dimensions. Users expressed satisfaction with folder settings for CMR, the user-friendliness of the platform, the systematic and useful nature of the data, efficiency enhancement in work operations, step reduction for information requests, and overall satisfaction with the data storage system. The cumulative average evaluation result of 4.44 further affirms the high satisfaction level, indicating the successful utilization of the data storage system in Microsoft Teams to meet user needs and enhance overall system quality in the academic context.

Conclusion

In conclusion, the implementation of digital platform-based data management, specifically utilizing Microsoft Teams, has proven to be instrumental in enhancing the quality assurance (QA) processes within a university faculty. The transition to a digital approach has facilitated the centralization of essential information, offering an efficient and easily accessible repository for Curriculum Monitoring Reports (CMR) preparation. This centralized approach ensured compliance with QA standards set by the faculty.

The success of this digital platform is underscored by its effectiveness in data analysis, aligning seamlessly with the requirements stipulated by the Ministry of Higher Education. By leveraging Microsoft Teams, the faculty had not only streamlined data management but had also demonstrated a commitment to meeting and exceeding educational quality assurance standards. This digital transformation stands as a testament to the adaptability and efficacy of modern technology in advancing educational administration and ensuring the continuous improvement of academic processes.

Suggestion

From this research, there were additional suggestions for developing a data management system to support educational quality assurance at the curriculum level according to the AUN-QA criteria as follows:

1. **Increase Publicity and Awareness:** There should be an effort to increase awareness and publicity to attract more users to the system.
2. **Continuous System Development:** Continuous development and updates to the system were essential to ensure it remains current and aligned with evolving needs.
3. **User Manual Development:** The creation of a comprehensive user manual is crucial to guide users on how to effectively utilize the system.
4. **Retrospective Data Enhancement:** There should be a focus on adding retrospective data about students, providing a more comprehensive historical perspective.

These recommendations are designed to contribute to the ongoing improvement and evolution of the data management system, ensuring that it not only meets the current needs of users but also adapts to future requirements. By addressing these suggestions, the system could become more user-friendly, informative, and aligned with the quality assurance standards outlined by IQA.

References

- [1] Jiratchaya Nakhonchai, “An Evaluation of Cooperative Education Project, Bangkok University”, Electronic Document Management System, Vol. 6, No. 5, September - October 2011, p. 129.

- [2] The Ministry of Higher Education, Science, Research, and Innovation (MHESI). (2022). “Guidelines for inspecting educational curricula and assessing educational management practices for the accreditation standards in educational programs”. <https://reg.dru.ac.th/2021/pdf/mua/mhesi-2565.pdf>

- [3] Jiraphon Klodpleng, “Database system for storing documents, evidence of education quality assurance Faculty of Food and Agricultural Technology, Bangkok University”, Electronic Document Management System, Vol.12, No. 20, April - May 2012, p. 55.

Contact email: Jaranya.san@kmutt.ac.th