

**DEVELOPING A KNOWLEDGE MANAGEMENT
MODEL FOR EDUCATIONAL QUALITY
ASSURANCE IN FACULTY OF EDUCATION,
MAHASARAKHAM UNIVERSITY**Chalard Chantarasombat*
Rungthip Singporn***Abstract**

This study aimed to make plans for knowledge management (KM) for educational quality assurance (QA) together with activity plans for work development of the department in the divisions of faculty of education, to examine conditional factors of success of KM for QA. The sample for this study, obtained by using a purposive sampling technique, consisted of 19 members of the operational committee of the Division of Research, Academic Service and Educational Quality Assurance, and those interested in volunteering to participate in the activity in the community. Mixed methods were used including participatory action research (PAR), research and development, qualitative research and quantitative research. Findings were: 1) The model of KM development in QA consisted of 6 stages: (1) team/core-leader preparation, (2) building motivation and participatory working, (3) making the plans and developing team potential, (4) putting the plans into practice and developing work, (5) follow-up and upgrading the body of knowledge, and (6) evaluation for conclusions. 2) In developing and trying out the KM model for QA, it was found that the KM model as a whole was appropriate at the highest level. Groups of people, community of practice (CoPs) operated KM according to the 6 stages of the learning process. Sources of knowledge were gained

from problems, raising questions concerning development including building knowledge, classifying knowledge, storing knowledge, implementing knowledge, sharing knowledge, and assessing knowledge. The Faculty of Education had a KM center responsible for all these processes. 3) The factors of success in KM for QA of Faculty of Education were the use of leadership by the researcher, participants, and administrator. Faculty of Education administrative committee members were learners and instructors. The important person in KM had to create positive awareness of organizational development, provision of opportunities for participants to have participation from the beginning and to be responsible for conducting the research, learning by practicing and improving and developing work, persons in the research team being enthusiastic about learning, performing work in their own group to be better than at present, and sharing learning at the level of persons, community groups and practitioners in both the real forum and the realistic forum.

Keywords: knowledge management model, educational quality assurance

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Introduction

External education quality assessment of the Office of Educational Standards Certification and Quality Assurance in round 2 in 2006 includes important differences from round 1. Assessment in round 2 mandates high objectivity and has clarity in terms of standards, indicators, and more importantly, has criteria for judging the results of assessment which are based on the principle that the institute has been developed to have excellence according to its own identity. The criteria for judgment are in conformity with standard criteria, criteria for developments, and criteria for achieving success according to the goals of official performance based on Mahasarakham University's plans. These plans emphasize production of graduates and research by giving the total weight to the following specific indicators: 1) standard in the quality of graduates to have specific weight higher than or equivalent to 35 percent of the total 2) standard in research work and creative work to have specific weight higher than or equivalent to 30 percent 3) standard in academic services to have specific weight higher than or equivalent to 20 percent and 4) standard in nurturing arts and culture to have specific weight higher than or equivalent to 10 percent (Office of Educational Standards Certification and Quality Assurance, 2006, p.5).

As a result of grouping higher educational institutes according to the focus on performance based on the missions of the institute, there were impacts on groups of institutes and groups of major fields which had to adjust themselves. It was regarded as a new issue at the levels of faculty, department, and major field. There had to be determination of internal and external QA systems which originated in connection with the administrators, plan-makers, practitioners,

and involved persons to share learning continuously to originate organizational culture in the type of participatory working. There occurred a learning organization and KM in the type of organizational quality and efficiency assurance. Also, the Faculty of Education had adjusted its Strategic Plan (2006-2009) to focus on 10 purposes. Purpose 9 operates internal QA for developing education continuously to receive quality standards certification, as well as to disseminate information to the public to meet strategy 1. The QA system was promoted and developed with these 4 major goals: 1) having projects to provide additional knowledge concerning QA for staff at least 2 projects a year: 2) all agencies in the Faculty must have complete systems and mechanisms for internal QA within the year 2006: 3) providing quality improvement plans from the assessment and having operation in each development plan with completion of at least at 75 percent of them: and 4) having systems of assessing instructors' instruction in every course with online assessment within the year 2006 (Faculty of Education, 2006, p. 20).

Thus, the research staff was interested in conducting a study of developing a KM model of educational quality assurance in the Faculty of Education, Mahasarakham University. If an appropriate and efficient method of KM was found, it would lead to higher quality staff development, work and organization development to have quality.

Purposes

1. To make KM plans in QA together with activity plans for work development of Departments and Divisions in the Faculty of Education

2. To examine KM models for QA together with activity in the Faculty of Education with efficient working mechanisms

3. To examine conditional factors of success in KM in QA for the Faculty of Education, Mahasarakham University.

Procedure

1. Sample

The sample for this study was selected by using a purposive sampling technique, comprising 19 operational committee members of the Divisions of Research, Academic Services, and Quality Assurance, according to the order of the Faculty of Education No.248/2006 on 2 May 2006, and interested persons who volunteered to participate continuously in the activities.

2. Methodology

This was a joint research study by the KM team, major coordinators of work groups as representatives of organizational efficient groups from each department/major field, and the researcher himself. A mixed methods research design was used including participatory action research (PAR), qualitative research and quantitative research. The stages of conducting the study were: 1) preparing team of core leading researchers, 2) building motivations, and participation, 3) making plans, 4) putting plans into practice, 5) follow-ups and upgrading knowledge, and 6) evaluation in summary.

3. Method

This study was divided into 3 phases:

1. Phase 1 studied related literature and determined the research conceptual framework: studied theories and concepts of knowledge and KM, studied concepts of developing models and research involving developing models, and determined research

conceptual framework in KM, KM cycle, and factors affecting KM.

2. Phase 2 selected the research participants.

The six focus Departments were Educational Administration Department, Curriculum and Instruction Department, Educational Technology and Media Department, Educational Psychology and Guidance Department, Educational Research and Development Department, and Health Science and Sport Department. The following were criteria for consideration:

1) The Departments in the Faculty of Education, Mahasarakham University were selected by using the following criteria: The Department had more than 1 major field. The instructors had graduated from various educational institutes. There were continuous development activities, but KM had not been implemented together with work development, and the departments volunteered to participate in learning and developing work. As for the department secretary, all Divisions in the Faculty of Education were regarded as a team of participants as practitioners and 10 knowledge managers from all the Departments.

2) The Departments selected to conduct this study were Educational Administration Department with 2 major fields: Educational Administration major field and Non-formal Education major field with a total of 9 persons.

3. Phase 3 developed the KM model, divided into 2 stages.

1) Constructed a tentative model of KM in QA based on the research conceptual framework in terms of the scope of important activities for KM, according to the concepts of Nonaka & Takeuchi; Vicharn Phanich; and Wiig's process of KM; and importantly, His Majesty King Bhumibol's

principle of working involving participatory work performance and knowing, love, and unity. These principles were integrated into techniques of development to be a tentative KM model of QA of the Faculty of Education. The tentative model was then submitted to three experts for considering its appropriateness and possibility in practice and congruence with group development plans.

2) Tried out the tentative KM model of QA and improved the model.

Results

As for the results from making plans for KM in QA together with plans of work development activities of the Faculty and Divisions of the Faculty of education, the researcher made plans for KM in QA together with plans of work development activities of Departments and Divisions knowledge analysis and KM of the Faculty of Education according to PAR and organizational KM model, which were divided into 6 phases: 1) preparing team/core leaders: 2) building motivations and participatory work performance: 3) making plans and developing team potentials: 4) putting plans to practice and work development: 5) follow-ups and upgrading the body of knowledge: and 6) evaluation in summary. After that, the KM model was submitted to the committee for QA of the Faculty of Education to check its completeness. KM activities and the stage of operation were improved for completeness, causing implementation of organization of learning activities together with KM, according to the plans for actually developing community groups of practitioners. However, the model's operation at each stage was to flexible, based on the period of time of the QA cycle.

Developing and trying out the KM model in QA

The construction of the KM model was a tentative KM model in QA by using the conceptual model of KM of Nonaka and Takeuchi (1995), Vicharn Panich (2005), and the KM process of Wiig (1993). Then the model was submitted to the Deputy Dean for Administration and Planning; Deputy Dean for Personnel, Student Affairs and Alumni Relations; and three representatives of the QA committee for considering its appropriateness, possibility in practice, and congruence of the appropriateness, possibility in practice, and congruence of the operational plans with the model of administration in QA. Based on the committee's considerations, the following results were reported: 1) The KM model as a whole was appropriate at the highest level: 2) Possibility of putting into practice of the KM model as a whole was at the highest level: 3) The congruence between the operational plans and the KM model as a whole was at the highest level.

The Operation of trying out the tentative KM model in QA and improving the model was divided into 2 paces. Pace 1 operated according to group activity plans together with KM: 1) Preparing team of research core leaders: 2) Building motivations and participation was learning together and work development: 3) Making plans was learning together and participation in developing potentials of the team and core leaders to initiate awareness: 4) Plans were put to practice by using participatory action research (PAR): 5) Follow-ups and upgrading knowledge, improving plans, and real action according to assumptions in the issues of interest: 6) For Evaluation in summary, consisted of building knowledge, classifying knowledge, storing knowledge, implementing knowledge, sharing

knowledge, and evaluating knowledge. In Pace 2, the results of a trial of KM model in QA and improving the model to be appropriate are illustrated below:

Stage

6. Evaluation in summary	15. Evaluating the KM process
	14. Positive reinforcement, Rewarding, and disseminating
	13. Establishing Faculty KM Center
5. Follow-ups and upgrading the body of knowledge	12. Operating KM together with QA in the pilot Department in terms of building, classifying, storing, implementing, sharing and evaluating knowledge
	11. Holding a meeting for planning and determining indicators of developing QA in the voluntary piloting departments
4. Putting plans to practice and work development	10. Summarizing lessons, reflecting and reviewing KM plans
	9. Operating KM in QA together with work development in departments/divisions
3. Making plans/ developing team potentials	8. Developing basic knowledge of computer and making web site and Bog
	7. Making plans and presenting KM together with activities for developing QA
	6. Determining issues in KM and activities for developing QA in individual persons, Department secretaries, and Divisions
2. Building motivations and participatory work performance	5. Determining goals and KM plans together with Faculty
	4. Summarizing and reviewing outcomes of study visits and case studies
	3. Study visits to organizations with outstanding KM in QA
1. Preparing team/ core leaders	2. Studying KM conditions and determining goals and visions of KM at the Department level
	1. Holding meeting for planning together with the administrator and team of research participants

Figure 1. KM Model in QA of the Faculty of Education

The results of trying out the KM model and learning at personnel and group levels could promoted them in different ways. The try-out of the KM model according to the stage, activity work plan, period of time, and readiness of team of participants could achieved the research purposes with quality. The results could affect human resource development (HRD), and work and organization development. The result of trying out the KM model in QA of the Faculty of Education was summarized as follows:

1) For building knowledge, before building or seeking actual knowledge for their own Departments/Divisions to be sustainable and to perform work continuously, the prominent and identical body of knowledge had been built, but it was not looked at from all perspectives, and the actual process of practice did not occur. It still lacked knowledge of using and connecting with data. After conducting this research, having experiences in study visits, and training from the staff of persons who had outstanding work in terms of QA, the participants could improve the process of work performance. Management and service provision to service uses impressed the participants much more by using the evaluation of satisfaction with teachers' teaching every semester. This was regarded as important information for work development. The new body of knowledge was incorporated continuously. Also, construction of a learning network aimed at long-term goals.

2) In classifying knowledge, before the research, was conducted knowledge of the groups was little systematized. It would link and reflect appropriateness. The importance of the prominent body of knowledge was not systematized. Seeking knowledge depended upon the stream of popularity with imitations of products. After conducting the research, the body of knowledge was more clearly

systematized. They participants cooperated in thinking and performing work in every process of work. They had good techniques of work performance. They also used more individual note-taking based on information.

3) In storing knowledge, before the research was conducted, the participants stored little knowledge of personal media and group media in the form of general document media, and printed matters. Computers had not yet been used for storing data. Operational outcomes and the body of knowledge were occasionally summarized. After conducting the research was conducted, they stored more group knowledge in the forms of documents, printed matters, and electronic documents. They had note-taking in their individual books based on functional roles. There were data note-takers according to types of activities. Information was stored in the computer database and on the website of the Faculty of Education.

4) In implementing knowledge, before the research was conducted, knowledge was implemented in the forms of personal media and general document media. Electronic media had not yet been used. Knowledge connections from outside were at a limited degree. After conducting the research, knowledge was implemented more in personal media, general document media, and electronic media. These media could connect more with inside and outside the Faculty. The Faculty had direct KM Coordination Division of the organization.

5) In sharing knowledge, before the research was conducted, the participants shared learning and teaching work of the groups in real forums: talking, questioning, demonstration, and action. After the research was conducted, they had sharing learning of people in and outside their own work lines in real forums. They transcribed the body of knowledge into important lessons

in authenticity on the website of the Faculty KM. There were persons who stored data and updated data in the form of realistic forums through the Internet or on the Faculty website. It was easy and convenient to access data and the body of knowledge about in the issues in which they were interested.

6) In evaluating knowledge, before the research was conducted, learning persons in the organizations worked individually. They thought differently and decided differently and eventually waited for orders from the administrator and group leader. There were neither working standards nor databases to connect data. They occasionally worked together by using his/her own data without sharing data. There was an unclear KM Coordination Division of any organization. After the research was conducted, the team and participants in each community group of practitioners became more enthusiastic about learning. They worked in teams with goals, and began implementing working standards of the Practitioner Division by having more databases for recording data and for connecting data from inside and outside the Faculty of Education. There was a direct KM Coordination Division of the organizations. There was a clear administrative structure for thinking together to determine visions, missions, goals, and purposes of working together. They worked together as a community group of practitioners, connected by working in the Faculty to originate sustainability.

From KM implemented in human development, work development, and organization development, the body of knowledge could be classified into persons, community group of practitioners, and Departments, as follows:

1) The persons could extract deep-rooted knowledge in themselves to mix with the knowledge gained from outside to put into practice, improve and develop their work

until they could reach conclusions. Also, they had records as documents for sharing learning in real and realistic forums. It could be seen from group practitioners, facilitators, and note-takers that they performed their work according to their functional roles to originate persons who were enthusiastic about learning together, with the performance being in conformity with the established visions.

2) The Faculty of Education's group of KM had management, structure, analytical thinking, determination of goals, working together, working standards, and work performance, together with KM, by beginning from an easy issue. Having seen future success, group members raised challenging questions to improve and develop work leading to knowing themselves and knowing their resources. They managed resources and used human resources in the role of community practitioners, including secretaries of all Departments and Divisions involved: Administration and Planning Division, Academic Affairs and Foreign Relations Division Personnel, Student Affairs, and Alumni Relations Division in terms of techniques and QA management of the Faculty of Education.

3) The Faculty of Education had its own KM center beginning directly from the QA activities of the Faculty. It aimed to be a maintenance factor with follow-ups of QA and participants to be continuous, and to benefit from sharing learning of the focus groups and interested people to use the communication services through the Internet and web sites.

4) As for the factors of KM success in QA of the Faculty of Education, the following points were found:

4.1 The use of leadership of the researcher, participants, administrator, and administrative committee of the Faculty of Education as learners, instructors, external managers, and synergy providers could

encourage to generate participatory work performance continuously. The researcher called himself “Facilitator 1.”

4.2 For important persons in KM of QA of the Faculty of Education, when conducting the research in the last phase, the team of participants intended to produce pieces of work to have work climate to succeed based on functional roles in KM and to present their own works according to the issues of interest and involving QA of this study. The participants called themselves “Facilitators 2”. They could perform work in substitution for major researcher based on the assumptions. Group work performers included: Department secretaries, Division representatives, summary note-takers, and KM center website maker in the team of participants. In the first phase, Department heads, teaching staff and Department secretaries, and deputy deans involved participated in learning and work performance. The coordinator, the secretary of the Faculty of Education, coordinated by linking groups and personnel to participate in the activities of this study. They were in the group of important persons to succeed in KM.

4.3 Providing opportunities for participants to have participation from the beginning: thinking together, planning together, performing together, checking together, and taking responsibility together in conducting research, could generate a good work climate. It was an important factor to generate a sense of belonging, initiation, visions, participatory work performance, better management, continuity, and commitment to do work by themselves. Also, confidence in the body of knowledge of their own organizations could emerge with more self-reliance.

4.4 Learning by doing, improving and developing work, raising new questions, and putting into practice

to achieve the goals could be effects from PAR. It was regarded as the way of life, causing them to generate interactions with one another within their own group and with other groups. There occurred sympathy, love, and care for one another. They were proud of their human dignity. This could be regarded as integrated KM of QA in the Departments and the Faculty.

4.5 Persons in the team of participants were enthusiastic about learning, performing work in their own group, and sharing learning at the personal level. The community groups of practitioners tried to implement tacit knowledge through practice, trying out idea until gaining confidence, summarizing and transcribing lessons, and note-taking to become explicit documents. These could be regarded as the meaningful and identical body of knowledge of the organization. It could be seen from the Department of Educational Administration which revised the functional roles of the teaching staff and personnel to initiate integration of organizational management with quality in all work, personnel, finance, and time. It was in conformity with the focus on the results of summaries on 29 May 2007. There also occurred an acceptance of work development in other different Departments of the Faculty of Education. The academic year 2007 could be regarded as an important focus of each Department on QA. All the Departments had to apply all the 10 major indicators and had to have learning goals together with performing work together. The Department of Educational Administration acted as the pilot Department.

Discussion

In this study of developing a KM model for QA there were the following interesting issues to discuss:

1. For the outcomes of a trial of the KM model for QA, it was found that this model was successful. It generated the expected outcomes because, in developing the model, the researcher used the conceptual frameworks after analyzing and synthesizing the concepts and results of the research conducted by international-level qualified persons in terms of KM and techniques of deployment. The researcher used the KM concepts of Nonaka Takeuchi, and Vicharn Phanich, and the KM process of Wiig to integrate into techniques of development. Importantly, the researcher used the working principles of H.M. King Bhumibol Adulyadej, involving participation, knowing, love and unity (Office of Special Committee for Coordination in the Projects Following the Royal Ideas, Unknown date, pp. 2-32), together with such other principles as after-action review (AAR), raising questions, sharing knowledge on real and realistic forums, including the KM. Supporting mechanism, namely the Faculty of Education KM center in the form of a center as an operational resource and in the form of a website, leading to integrated KM of the Departments and Divisions. Some important evidence indicating success was:

1) There occurred important learning persons in the Departments. There were 4 groups of knowledge managers: facilitators, practitioners, note-takers, and network managers. This was consistent with the view of Nonaka and Takeuchi (1995, pp. 20-25). The building management team began mainly from persons. The organization members understood their functional roles in KM. Real knowledge managers were the major practitioners. The group of medium-level managers interpreted and transformed knowledge into knowledge on paper. The group of knowledge managers determined goals, created a climate to help in sharing knowledge, and extracted knowledge to

initiate value. This was in congruence with Vicharn Phanich's idea (2005, pp. 23-48). Important KM managers in the organization included : Khun Amnuai who promoted to initiate activity, systematic and cultural sharing knowledge; Khun Kit who was group practitioner, regarded as a knowledge manger or an activity operator in approximately 90 percent of all the activities; Khun Likhit who was a note-taker of data in KM activities and narrations summarized essences of knowledge, and took notes in the meetings; and Khun Prasan who was the KM network manager among organizational groups.

2) There occurred knowledge together with practice. The sources of knowledge were problems, raising questions, solving problems, using real practices until the appropriate body of knowledge occurred, leading to KM according to the issues of interest. They were building, classifying, storing, implementing, sharing, and evaluating knowledge. This was in congruence with H.M. King Bhumibol Adulyadej's principle of working (Office of Special Committee for Coordination in the Projects Following the Royal Ideas, Unknown date, p. 32). The King's idea about working may be summarized as "Knowing, love, unity". People and groups of people must know that before doing anything, they need to know about all the factors, know all the problems, and know how to solve those problems, They must have love to consider be beginning practices in solving those problems. And for unity to practice work you should keep in mind that you cannot work alone. You must work cooperatively as an organization or a staff of people.

A staff of people has the power to solve problems well. This is in accordance with Prawet Wasi (2002, p. 21), who says that a person's learning is not sufficient to make that matter successful, because other people and other organizations and institutes

involved do not learn. Only learning together in practice will be successful. Knowledge must be managed through practice in the knowledge packager of each organizational group. This view is also in congruence with Naowarat Phlainoi (2003, pp. 2-5), who says that after-action review is regarded as important learning in extracting the knowledge essence and findings of an appropriate person or organization.

3) There occurred a KM center which could drive the groups to meet and share the learning of each village to work cooperatively to achieve the established visions, missions, goals, and purposes. There was a central administrative committee for following up the progress in work development through a monthly meeting forum and realistic forum with a website in the Internet system as a source of disseminating KM outcomes and sources of storing and sharing learning. This is in accordance with the concepts of Nonaka and Takeuchi (1995, pp. 71-72) and Vicharn Phanich (2005, pp. 1-4), in that KM had to rely on utilization of IT and communications to support it and the instruments or technology used in KM. It was also in accordance with the concept of Senge (1990, pp. 13-14), who says that in building a shared vision there should be sharing of knowledge, concepts and worldviews of people in the organization to lead to main shared visions of the organization. Everyone in the organization should participate in building these visions and should help one another build a future image of the organization. Everyone should devote their physical and mental strengths to achieve the goals of the organization.

2. The team of participants as a whole showed a high level of satisfaction with KM operation in QA of the Faculty of Education. When practitioners of the Departments and Divisions were classified, it was found that

the practitioners of the Departments and Divisions showed their satisfaction with KM operation at a high level. It was because everyone improved and developed the selves. Everyone worked according to the functional roles of the KM center. This was in congruence with external quality assessment in Round 2. As for the Faculty of Education, its standards were certified and the results of assessment by the committee as a whole were at a very good level (The Office of Educational Standards Certification and Quality Assessment, 2006, p. 33)

3. Some important factors of success of the KM model of QA which s were as follows:

1) For important persons in KM of QA when conducting the research in the last phase, the team of participants intended to work for public to generate success according to the functional roles, demonstrated a sense of belonging to activities and work plans, and sought more cooperation from persons and internal and external organizations.

2) The participants were provided with opportunities to participate actively from the beginning: thinking together, planning together, checking together, and taking responsibility together in conducting the research. This was in congruence with Paitoon Sinlarat (1999, pp. 22-24) concerning the principle of administration of the organizational leader which trusted the leader who had high power over and influence upon the organization. Therefore, if understanding was built up and if agreements on participatory working were cooperatively determined, it would cause positive working together, job satisfaction, and work climate and it would push the work to be successful.

3) Learning by practicing was the way of life. There was real practice. Experience in the new body of knowledge emerged, which

would help in real application. Connections and relationships with one another between of persons and organizational groups emerged. Integrated KM and participatory research could occurred. This was in congruence with the results of the research conducted by Yuwanut Thinnalak (2006, pp. 1-7). She found that building knowledge which was in congruence with and appropriate to Thai society, which could be regarded as being based on self-reliance. Practices, developing innovations, and learning what one had aptitudes for could build the body of knowledge for solving problems and living joyfully in the society. Also, there was a trend toward sustainable development.

4) There occurred a mechanism to support working together: a Faculty of Education KM center under the management of the team of participants to follow up progress in the work operation of the community group of practitioners in Divisions and Departments to originate continuity and connections and relationships with one another. There was a website. The Internet system was used as a source for seeking knowledge and disseminating KM works. It was used as a source for storing and sharing knowledge among people in and outside the organization. This was in congruence with Chalard Chantarasombat (2007, pp. 260-265), whose study revealed that there was a driving mechanism: the community organization KM center used as the center for coordination, the place for meeting, the forum for sharing knowledge, the channel for communication and working together, and for storing the body of knowledge of the team of participants and interested people. The members of tambon administrative organizations at every village became partners in work performance at every stage.

Recommendations

1. Recommendations for implementing the KM model:

1.1 Implementation of the developed KM model of QA needed full operation of all the 6 stages and 16 major activities. If the Faculty and Department would continue operation, they could begin from Activity 6.

1.2 If the team of participants was regarded as the team of important persons in KM, the Department should promote and support Department administrators, teaching staff, and Department secretaries to operate learning together first in order to determine goals and indicators of work development to achieve the purposes of internal and external QA. The 10 indicators were regarded as the focus on work development to build the outstanding body of knowledge generated from practices on the basis of problems of authentic work development.

1.3 The Faculty KM center should be promoted and supported to generate a variety of clinics, a change leader in each section, and sharing knowledge in the monthly forum and the realistic forum by using the website and Internet.

1.4 Practitioners, Department secretaries, and Division officials in the Faculty still had potentials to engage in participatory work performance in creating QA at a medium level. Training, practices, and study visits should be continuously developed.

2. Recommendations for further research

2.1 There should be a variety of research and development of programs of study, activities for development, potentials for teamwork, and research clinics across sciences, according to issues of interest, together with the research interests of Master's

program and doctoral program students. This would lead to a transfer of teaching work in terms of research and development of KM and in other aspects to become more efficient.

2.2 There should be research and development of QA together with total quality management (TQM) at Department and Faculty levels.

2.3 There should be action research at the Department level, using the working principles of H.M. the King involving sufficiency economy, self-reliance, participatory working, knowing, love, and unity to connect with the organization, students, and service users in a concrete form.

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