

The development of competencies as needs by the academic support personnel in higher education institutions under state supervision with an emphasis on science and technology in Thailand

El desarrollo de competencias según las necesidades del personal de apoyo académico en instituciones de educación superior bajo supervisión estatal, con énfasis en ciencia y tecnología en Tailandia

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Abstract

This paper reports on the needs for development of competencies of personnel in higher education institutions. The sample consisted of 342 personnel from KMITL, KMUTNB, and KMUTT. The tool used was questionnaires 5-level. The statistics were percentage, frequency, mean, S.D. and data analysis by using the $PNI_{modified}$ index. When ordering the priority of the development, it was found that the administrative competencies in strategic vision required the most development work ($PNI_{modified} = 0.213$). In contrast, the core competency in adherence to righteousness was the least important competency to develop ($PNI_{modified} = 0.097$).

Keywords: competency, academic support personnel, higher education, science and technology

Resumen

Este documento informa sobre las necesidades para el desarrollo de competencias del personal en las instituciones de educación superior. La muestra consistió en 342 personas de KMITL, KMUTNB y KMUTT. La herramienta utilizada fue cuestionarios de 5 niveles. Las estadísticas fueron porcentaje, frecuencia, media, S.D. y análisis de datos utilizando el índice PNI modificado. Al ordenar la prioridad del desarrollo, se descubrió que las competencias administrativas en visión estratégica requerían la mayor parte del trabajo de desarrollo ($PNI_{modified} = 0.213$). En contraste, la competencia central en la adherencia a la rectitud fue la competencia menos importante para desarrollar ($PNI_{modified} = 0.097$).

Palabras clave: competencia, personal de apoyo académico, educación superior, ciencia y tecnología

1. Introduction

The current era is one of rapid social change both at national and global levels, resulting in the advancement of information technology in the 21st century. It leads to changes in economy, politics, society and environment that directly affect the progress of the organization. To cope with these changes, executives must be to be ready

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in all aspects, especially the academic knowledge and technological skills. Higher education institutions under state supervision must adapt to changes that occur all the time and must develop work processes. The management that can meet the needs of the society, that organization will be managed to achieve the goal efficiently and effectively. However, it depends on the quality and the potential of the personnel because they are considered the most important resource in management which requires skills knowledge, expertise and attitude suitable for the performance of duties (McClelland, 1973). Promotion of knowledge and skills or performance in accordance with the goals and strategies of the organization have desirable features by having good attitude and working behaviors that are most beneficial to the organization. They will enable the organization to progress and develop continuously to get the most out of competencies. It is necessary to focus on studying the necessary competencies by considering how people in the organization must be able to beat their competitors and achieve their goals as they can withstand in the

environment of a highly competitive society (Thothum, 2018). Therefore, it is the duty of the organization to study the competency of personnel in accordance with their roles and responsibilities in line with the goals and strategies of the organization to keep up with changes in various environments in order to be able to operate efficiently and effectively by which the organization has a policy in determining the direction of its own human resource management (Maharatsakul, 1999). The human resource development is an important process that will result in systematic behavior changes resulting in personnel having knowledge, skills and attitudes in various matters, which is consistent with the concepts (McClelland, 1973; Parry, 1998 ; Spencer & Spencer, 1993), and the ability to work according to the concepts of Hamel,G., & Prahalad, C.K. (1994).

Both basic knowledge, skills and ability and the level of work that is most effective to meet the needs of the organization, which leads to personnel who are advanced and able to adapt to the environment. To accommodate changes in both internal and external environment, the organization's processes need to be clear, consistent and must develop a system suitable for both current and future operations. Every organization needs quality human resources. Personnel should have the core competency leading to the organization's evolution in the desired direction. Applying competencies to human resource management will help people who can perform work efficiently and achieve performance that meets the objectives and goals of the organization. Competency is an important factor in work that increases the ability of the organization to compete, especially the ability to manage human resources. As competency is a factor that helps develop the potential of the personnel in order to result in the development of the organization (Thongkaew, 2002). The organization tries to use the competency to be used as a factor in the organization management in various areas such as human resource management, service development, and leadership development. Performance enhancement is therefore used to enhance the efficiency of human resources in the operation, which is a hidden feature within the person that will be the driving force for a person to create performance in work that is responsible for them to exceed the target.

The higher education institutions under state supervision with an emphasis on science and technology have realized the need for appropriate competency development for academic support personnel that must be continuously developed by strengthening motivation so that personnel are ready to devote their energy in working to achieve the objectives of the organization according to Frederick Herzberg's Motivation Theory. (Herzberg, 1959). that discussed the factors that motivate people to like and love the work that is done to stimulate satisfaction in order to work efficiently for success. Therefore, for an autonomous university to successfully manage its operations to achieve its vision and mission, the organization must pay attention to the study of competency of personnel in various fields in order to assess the needs and prioritize the need to see the importance of competency in each area and the elements that are suitable for the personnel in the organization. Then, the competency is to be developed to benefit and be suitable in the age that have changed in the present and which are expected to occur in the future as for creative change and positive change, according to

Wongwanich. (1999) who states that the purpose of needs assessment is to try to get the information that helps to enhance the planning, making activities or solving problems in accordance with the actual situation so that executives can use as a guide in planning, determining the human resource management policy in terms of performance to be appropriate, which may result in policy changes, and strategic human resource management planning for the next direction.

2. Methodology

2.1 Population and sample groups

The population in this study was academic support personnel in higher education institutions under state supervision with an emphasis on science and technology, included a total population of 3,070 people, 1,220 people from King Mongkut's Institute of Technology Ladkrabang, 840 people from King Mongkut's University of Technology North Bangkok, and 1,010 people from King Mongkut's University of Technology Thonburi.

For the sample, a total of 342 people were selected out of the entire population of academic support personnel with 136 people from King Mongkut's Institute of Technology Ladkrabang, 94 people from King Mongkut's University of Technology North Bangkok, and 112 people from King Mongkut's University of Technology Thonburi.

To determine the sample size, a computer program was used to find the entire population size to study in order to find the sample size that was proportional to the population size.

2.2 Research instruments

The tool used for data collection was a 5-level validated questionnaires with the IOC consistency index between 0.60 to 1.00 and with a confidence value of 0.95 There were 61 questions and 19 sections in 3 aspects, which are 1) Core Competencies: achievement, good service, accumulation of proficiency, adherence to righteousness and teamwork, 2) Functional Competencies: analytical thinking, holistic vision, search for information, proactiveness, accuracy, flexibility, communication and influencing, responsibility and lastly 3) Administrative Competencies: leadership, strategic vision, potential to bring about change, self-control, coaching and assignments, and problem solving and decision making.

2.3 Data analysis

Data analysis was carried out according to the opinions of the actual and expected competencies of the academic support personnel with SPSS program to determine the mean (M) and standard deviation (S.D.). The statistical value of the Modified Priority Needs Index (PNI_{modified}) was also used to analyze the data (Wongwanich, 2015). The level of opinions criteria was divided into 5 levels (Leikitwattana, 2013) and the criteria for interpretation of opinion levels for various aspects was based on Best's concept (Best, 1970).

Data were collected from academic support personnel in higher education institutions under state supervision with an emphasis on science and technology in Thailand. After the needs had been assessed, they were then prioritized using the formula as follows:

$$PNI_{\text{modified}} = (I-D) / D$$

I (Importance) = expected competency

D (Degree of success) = actual competency

3. Research results

Results of the analysis of actual competencies according to the opinions of the academic support personnel in higher education institutions under state supervision with an emphasis on science and technology (Table 1)

Table 1

The opinions of actual competencies of academic support personnel in Higher Education Institutions Under State Supervision : with an Emphasis on Science and Technology

Competencies of academic support personnel	actual competencies level			
	N = 325		rank	level
	Mean	S.D.		
Core competencies				
1..achievement	3.86	0.77	High	4
2. good service	3.98	0.79	High	2
3. accumulation of proficiency	3.81	0.81	High	5
4. adherence to righteousness	4.21	0.82	High	1
5. teamwork	3.91	0.84	High	3
Total	3.95	0.81	High	
Functional competencies				
1. analytical thinking	3.76	0.79	High	5
2. holistic vision	3.52	0.79	High	8
3. searching for information	3.79	0.79	High	4
4. proactive action	3.66	0.82	High	7
5. accuracy	4.08	0.83	High	1
6. flexibility	3.93	0.84	High	3
7. communication & motivation	3.73	0.83	High	6
8. responsibility	4.02	0.83	High	2
Total	3.81	0.82	High	
Administrative competencies				
1. leadership	3.69	0.81	High	4
2. strategic vision	3.47	0.88	High	6
3. potential to bring about change	3.48	0.89	High	5
4. self-control	3.82	0.85	High	2
5. coaching and assignment	3.87	0.84	High	1
6. problem solving and decision making	3.75	0.78	High	3
Total	3.68	0.84	High	
Total average	3.81	0.82	High	

From Table 1, the result showed that the actual competency level of support personnel in overall and each aspect were at high level (Mean = 3.81). The core competencies showed the highest mean values (Mean = 3.95). The item with the highest mean was adherence to righteousness (Mean = 4.21) while the item with the smallest mean was accumulation of proficiency (Mean = 3.81). Regarding administrative competencies in overall, the result showed the lowest mean (Mean = 3.68). The item with the highest mean was teaching and assignment (Mean = 3.87) while the least mean was strategic vision (Mean = 3.47).

Results of the expected competency analysis according to the opinions of the academic support personnel in higher education institutions under state supervision with an emphasis on science and technology in Thailand (Table 2)

Table 2
The opinions of expected competencies of academic support personnel in Higher Education Institutions Under State Supervision : with an Emphasis on Science and Technology

Competencies of academic support personnel	expected competencies level			
	N = 325		rank	level
	Mean	S.D.		
Core competencies				
1. <i>achievement</i>	4.44	0.70	High	5
2. <i>good service</i>	4.52	0.67	Highest	2
3. <i>accumulation of proficiency</i>	4.45	0.70	High	4
4. <i>adherence to righteousness</i>	4.62	0.66	Highest	1
5. <i>teamwork</i>	4.50	0.69	Highest	3
Total	4.51	0.68	Highest	
Functional competencies				
1. <i>analytical thinking</i>	4.37	0.72	High	4
2. <i>holistic vision</i>	4.22	0.73	High	8
3. <i>searching for information</i>	4.34	0.73	High	6
4. <i>proactive action</i>	4.33	0.74	High	7
5. <i>accuracy</i>	4.57	0.67	Highest	1
6. <i>flexibility</i>	4.46	0.70	High	3
7. <i>communication & motivation</i>	4.37	0.73	High	5
8. <i>responsibility</i>	4.53	0.68	Highest	2
Total	4.40	0.71	High	
Administrative competencies				
1. <i>leadership</i>	4.30	0.75	High	4
2. <i>strategic Vision</i>	4.21	0.80	High	5
3. <i>potential to bring about change</i>	4.20	0.81	High	6
4. <i>self-control</i>	4.44	0.71	High	1
5. <i>coaching and assignment</i>	4.43	0.73	High	2
7. <i>problem solving and decision making</i>	4.40	0.71	High	3
Total	4.33	0.75	High	
Total average	4.41	0.71	High	

From Table 2, the result showed that the expected competency levels of support personnel in overall was at high level (Mean = 4.41). The core competencies showed the highest mean values (Mean = 4.51). The item with the highest mean is adherence to righteousness (Mean = 4.62) while the smallest mean is the achievement result (Mean = 4.44). The administrative competency, in overall, have less mean value than both core competency and functional competency (Mean = 4.33). While self-control has the highest mean of 4.44, potential to lead to change has the least mean of 4.20.

Assessment of needs, according to the actual and expected conditions of academic support personnel in higher education institutions under state supervision with an emphasis on science and technology in Thailand (Table 3).

Table 3
Assessment of needs, competencies
on actual and expected conditions

Competencies of academic support personnel	Needs assessment					
	competencies on actual and expected					
	actual competency		expected competency		PNI _{modified}	level
	Mean	S.D.	Mean	S.D.		
Core competencies						
1. achievement	3.86	0.77	4.44	0.70	0.150	3
2. good service	3.98	0.79	4.52	0.67	0.136	4
3. accumulation of proficiency	3.81	0.81	4.45	0.70	0.168	1
4. adherence to righteousness	4.21	0.82	4.62	0.66	0.097	5
5. teamwork	3.91	0.84	4.50	0.69	0.151	2
Total	3.95	0.81	4.51	0.68	0.140	
Functional competencies						
1. analytical thinking	3.76	0.79	4.37	0.72	0.162	4
2. holistic vision	3.52	0.79	4.22	0.73	0.199	1
3. searching for information	3.79	0.79	4.34	0.73	0.145	5
4. proactiveness action	3.66	0.82	4.33	0.74	0.183	2
5. accuracy	4.08	0.83	4.57	0.67	0.120	8
6. flexibility	3.93	0.84	4.46	0.70	0.135	6
7. communication & motivation	3.73	0.83	4.37	0.73	0.172	3
8. responsibility	4.02	0.83	4.53	0.68	0.127	7
Total	3.81	0.82	4.40	0.71	0.155	
Administrative competencies						
1. leadership	3.69	0.81	4.30	0.75	0.165	4
2. strategic Vision	3.47	0.88	4.21	0.80	0.213	1
3. potential to bring about change	3.48	0.89	4.20	0.81	0.207	2
4. self-control	3.82	0.85	4.44	0.71	0.162	5
5. coaching and assignment	3.87	0.84	4.43	0.73	0.145	6
6. problem solving and decision making	3.75	0.78	4.40	0.71	0.173	3
Total	3.68	0.84	4.33	0.75	0.177	
Total average	3.81	0.82	4.41	0.71	0.157	

From Table 3, the result showed that the evaluation of needs for administrative competencies pointed out that there was the highest need (PNI_{modified} = 0.177). The most needed item was the strategic vision (PNI_{modified} = 0.213). The least necessary item was coaching and job assignments (PNI_{modified} = 0.145) followed by functional competencies (PNI_{modified} = 0.155). Item with the most need was the holistic vision (PNI_{modified} = 0.199) while the least necessary was accuracy of work (PNI_{modified} = 0.120). For the core competencies (PNI_{modified} = 0.140). Item with the most need was the accumulation of professional expertise was (PNI_{modified} = 0.168). The least necessary item is adherence to righteousness (PNI_{modified} = 0.097).

4. Discussion

The results of needs for development of competencies of academic support personnel in higher education institutions under state supervision with an emphasis on science and technology in Thailand in all 3 areas, suggested that there were needs to develop the competencies from highest priority to lowest priority as follows:

1. Administrative Competencies: In academic support personnel's view, there were needs and necessities to set the highest strategic vision with the expectation that in the future personnel must have the ability to set clear directions, missions and work goals as well as the ability to create unity in order to achieve the mission. Moreover, there were needs for exchange of information, such as listening to other people's opinions in order to formulate a vision along with goals, and directions for the operation of the department to achieve the vision and in line with the national vision.

The personnel should have the potential to lead changes, particularly, to bring organizational changes, to plan and organize improvements to be in line with changes that have already occurred or are about to occur to the organization, which allows the organization to be able to achieve its goals. This is consistent with the concept of Woo & Sullivan (1996) that in the future, the management of the organization should have the required competency—knowledge—the ability to drive for change, and the skills to convince others. This is based on the theory of Herzberg Frederick Herzberg (1959) that discussed about the ability to motivate others to see the importance of change in order to create cooperation or push others into useful modifications including communication with others to understand, and implementing those modifications to be realized and to support organizational change efforts along with pushing suggest methods and participate in the adjustment to be carried out smoothly and successfully.

This corresponds to Hamlin's concept (Hamlin, 1991), who mentioned about the administrative competencies that there were a participation with the team, consultation and decision-making, the ability to solve problems, learning the fundamental process and techniques for decision making to solve problems by having problem solving skills and systematic decision making and continuously developing (Civil Service Commission, 2009), analyzing cause of problem and ways to solve problems effectively.

Therefore, the organization should develop competencies by giving priority to administrative competencies first as all personnel in the organization must have the management capabilities necessary to work in order to be successful and in accordance with the strategic plan to have the vision of the organization as well as having the potential to lead change, which is the ability to stimulate communication for others to understand and drive the organization to useful changes, having the power to solve problems and make decisions, and a freedom of thought to be suitable for changes in the 21st century.

It is necessary to prioritize needs in order to develop administrative competencies as they are important in the current changing era, including

1) strategic vision, 2) potential to bring about change, and 3) problem solving and decision making.

The second competency that should be developed is functional competencies: 1) holistic vision, 2) proactive action, and 3) communication and motivation. The core competencies should must be developed lastly: 1) accumulation of proficiency, 2) teamwork, and 3) achievement.

2. Functional Competencies : In academic support personnel's view, there were needs and necessities for a holistic of the organization, personnel, and other resources that includes understanding of the culture and environment within the organization, beliefs and values, visions, missions that members share and use them as a guideline in performing tasks to achieve the specified objectives. They should have love, commitment, and

ready to develop and improve oneself in working for their departments and organizations to progress further (Thothum, 2018). In addition, knowing the external context of the organization is to know the external environment that may have changes according to the economic, social and political conditions of the country and the world, especially higher education institutions that are highly competitive in business. Therefore, there were needs to develop quality education and to have a good management system, effective and managed financial resources that mobilize funds from various parts to provide education for stability (Muangkaew, 2012). There are risks from external factors that personnel must always know and be aware of all the time by looking at not just inside the organization, but they must also look out of the box to the external environment as well (Senge, 1990).

For proactive action, it is work that has goals for the future for the feature, sees the problem and is ready to deal with the problem by relying on information or experience gained from the past and currently experiencing, which the framework will focus on events that occur in the future and on the mission that is fast, cost-effective, and quality or is a plan that has been carefully planned in advance, know and be responsible for themselves by being able to choose to respond to external stimuli. It is used for rhetoric and various strategies in communication to create a consistent understanding, negotiate, persuade, and allow others to take any action as intended to succeed.

The art of persuasive communication is therefore a specific competency necessary for personnel to communicate, exchange news and communicate ideas or attitudes, mutual feelings as well as creating mutual understanding. They are necessary to rely on science and art communication in order to create a good understanding with one another. When all personnel have the skills in communication, motivation, they can become successful leaders. They directly affect the efficiency of personnel and increase the performance of the organization and the country as a whole (Suwannarang, 2013).

3. Core Competencies: In academic support personnel's view, there were needs and necessities to accumulate expertise in a career by being interested in accumulating knowledge and the ability in the operation from research and developing oneself continuously. The personnel should also be interested in following up on new knowledge and modern technological trends related to their work until they are able to apply various technical and technological knowledge in performing duties to achieve the most important and necessary work. Using various technologies in the performance of duties is an important component of work in the modern era that has changed dramatically which causes personnel to constantly prepare for change and always research for knowledge from work that is done in order to develop expertise in their duties. There is also teamwork with determination and readiness to work with others or be part of the team, department or organization (Office of the Civil Service Commission: 2009) by participating in problem resolution and sharing experiences and opinions with team members who are pleased to work with one another by respect the value of others. They should have good coordination skills in order to create working relationships (King Mongkut's University of Technology Thonburi) as well as the ability to create and maintain relationships with team members.

5. Conclusions

The result of the competency level according to the opinions of academic support personnel showed that the opinion level of core competencies and functional competencies in actual and expected conditions are in the same rank order (1st – 3rd order).

In the core competencies, the highest level of opinions were 1) adherence to righteousness, 2) good service, and 3) teamwork, followed by functional competencies which were 1) accuracy 2) responsibility and 3) flexibility.

The level of administrative competencies in actual and expected conditions have different opinions. Coaching and assignment aspect was the most needed to be practiced in the actual condition, while self-control had the most competency in the expected condition.

For the priority of development needs, the administrative competencies required the most development work, namely 1) strategic vision, 2) potential to bring about change, and 3) problem solving and decision making. The next competency required to be developed was functional competencies namely 1) holistic vision, 2) proactive action, and 3) communication and motivation. The core competencies were the least important competency to develop: 1) accumulation of proficiency, 2) teamwork, and 3) achievement.

6. Suggestions

By assessing the needs for the development of competencies of academic support personnel in higher education institutions under state supervision with an emphasis on science and technology: a case study in Thailand, it is suggested that this research can be used as a policy proposal for executives in order to set guidelines for human resource development planning in terms of core competencies, functional competencies and administrative competencies get as follows:

1. Core Competencies

1) To encourage personnel to gain expertise in their careers by applying academic and technological knowledge in performing duties and always acquire job relevant knowledge.

2) To promote and support personnel to work together as a team-i.e., to have the same goal, to plan together with their teams.

3) To focus on work by focusing on achievement, improvement, goals, meeting and exceeding work standards in order to improve the organization's performance.

4) To encourage personnel to improve and develop themselves in accordance with the core competencies to achieve effective management.

2. Functional Competencies

1) Holistic Vision: To create understanding for personnel to have awareness of seeing the big picture, thinking system atically, and seeing the goals across the entire organization.

2) Proactive Action: To perform proactive action by encouraging and motivating personnel who like to think and plan, manage and prepare everything in advance, and work effectively in order to excel in their careers.

3) Communication & Motivation: to have an intention to communicate, listen, coordinate, and use media especially media technology, which might be convincing to impress colleagues and supporting the idea that communication arts and motivation are considered important in today's changing era.

3. Administrative Competencies

1) Strategic Vision: A systematic management that requires a vision of a leader and step-by-step planning. It also requires building relationship with others as well as internal and external strategic network.

2) Potential to Lead Change: 1) To have personality traits of a leader and leadership to promote potential development of subordinates and colleagues. 2) To have a potential to change policies. 3) To use technologies in the organization. 4) To have an ability to adapt and respond to organizational changes.

3) Problem Solving and Decision Making: It is important for personnel to have the ability to solve problems and to make timely decisions as rational decision-making skills benefit the organization as a whole.

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