

# **A CANDIDATE OF MANAGEMENT MODEL FOR AN EDUCATIONAL TECHNOLOGY CENTER IN FIVE COMMERCIAL COLLEGES IN THAILAND**

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## **ABSTRACT**

The basic requirements for the educational technology center to serve as a good center for students in five commercial colleges in Thailand were investigated. The information obtained from the study was used to propose a good management model of an educational technology center in commercial colleges in Thailand. The basic requirements were categorized into five areas, i.e., educational material production and provision, audio-visual aids, facilities and spaces in the center, budget to support the activities, and orientation and training program for the students to take full advantages and use the facilities in the center.

The information dealing with all basic requirements were obtained from the analysis of questionnaires returned from 226 teachers and college administrators from five commercial colleges consisting of four colleges in Bangkok and one college in Phitsanulok province, Thailand. The questionnaires were consisting of 114 items, which divided into 3 parts. The first part was dealing with the biography of respondents. The second part was dealing with the problems in management of the centers that currently existed. The third part was dealing with their opinion to solve the existing problems and their expectancy to develop a good management model of the center.

It was shown that the management problems that currently existed in the educational technology center were as follows: budget to run the activities of the center, orientation and training program for the students to take full advantages in using the facilities, the production of educational materials and provision, inadequate audio - visual aids, inadequate facilities and spaces.

It was found that in terms of existing problems, the budget to run the activities of the center was ranked first, followed by orientation and training for the students to take full advantages in using the facilities, the production of materials and provision, services of audio - visual aids, and building and facilities, respectively. All of the respondents expressed their needs for the center as follows: the orientation and training of the students to take full advantages in using the facilities was the immediate need, followed by the production of materials and provision, services in supplying audio - visual aids, adequate

budget to run the center, and adequate facilities and space, respectively. Thus, the good candidate management model for an educational technology center should consist of allocating enough budget to run the center, setting up orientation and training program for new comers as frequently as possible, supporting the production of educational material and provision, servicing in supplying audio – visual aids, and providing adequate facilities and spaces for the students. This candidate management model was criticized and approved by a group of 11 experts.

## INTRODUCTION

The Vocational Education Commission is one of the five main sections within the Ministry of Education. Its role is to promote excellence in vocational skills by creating educational opportunities, improving the quality of teaching and learning, and by increasing competitiveness of the students. The educational system in Thailand comprises of primary education, secondary education, and higher education. According to Thailand's constitution, it mandates that every child has the right to twelve years of free education, where nine of which are compulsory. The compulsory period includes three years of secondary education. During the final three years of free education, students are divided into two streams, i.e., general and vocational education. At present, around 60 per cent of students go into the general education stream. However, the government has a policy of strengthening the vocational educational stream, shifting the balance between the two to 50:50.

The vocational education begins at the upper secondary level. Three levels of technical and vocational education are offered, i.e., the Certificate in Vocational Education which is taken during the upper secondary period, the Technical Diploma which is taken after school-leaving age, and the Higher Diploma or Degree. A variety of different options is available within each area.

Vocational education is offered both through public and private sector institutions. At present, there are 412 colleges under the direct supervision of technical and vocational education. In addition, there are 401 private vocational schools operating in Thailand. In 2004, over a million students were

studying in programs organized by Vocational Education Commission, and a further 380,000 vocational students were studying in private colleges. However, there are only 5 public commercial colleges under the umbrella of Vocational Education Commission (Vocational Education Commission, 2006, <http://www.vec.go.th>).

The educational system in Thailand is emphasized on the promotion of all efforts that will provide a firm foundation for students, which in turn will lead to creation of a lifelong learning society. There is a need to establish the system for transferring of learning outcomes by increasing the channels for lifelong learning for all and accelerating the establishment of the educational media for education. The improvement of the programs to enjoy a variety and captivate the learners' interests in accord with their needs will also be done at the same time. It has been shown that the establishment of a research and development center for curriculum and learning, which serving as a knowledge bank, is needed in order to improve curriculum based on research and study. The knowledge bank will also serve as a curriculum bank, presenting a collection of model school curricula, which can be adjusted for application; the educational media, textbooks and source books collected will also be beneficial to teaching and learning activities in schools (Chaisang, 2006).

There is a trend of accelerate effectiveness and efficiency in the development of curriculum, textbooks, educational media, assessment and evaluation of educational achievements in schools, based on appropriate interpretation at all levels

regarding the meaning of core curriculum and that of the respective educational institutions. Efforts have been made to improve the quality of teaching and learning activities of small institutions through various measures aimed at enhancing their quality on a systematic basis. This will alleviate teachers' workload through provision of models of curricular contents, educational media, etc., as well as distribution of established employee posts to schools/school clusters; with allocation of budget ceiling for development/training for each teacher per annum. Such scheme could be self-managed by the schools themselves with the support of teacher-development networks and universities, which offer training courses. It can be done by based on problems of actual situations and learning needs of teachers and learners as well as prevailing practices in the educational institutions; providing a variety of options to meet the requirements for learning reform; provision of educational technologies to meet the actual requirements of individual educational institutions. The collaboration between educational institutions and production and service sectors, aimed at production of work force with the necessary skills required for employment and/or entrepreneurship, as well as serving the needs for higher competencies required for increasing the various categories of industrial products will be encouraged.

Attempts will be made to organize a supporting system to enhance the potential of all vocational education institutions in educational provision, creating a desirable image, and enabling these institutions to play constructive roles in society. The clarification of the roles and responsibilities of different categories of vocational education institutions is well documented, i.e., support introduction and expansion of courses for the disciplines required by the labor market, in particular the major disciplines needed for national development, develop the curriculum, teaching and learning methodology, and methods for assessing and evaluating learners' achievements. There is a need for the accelerate development of professional standards, professional qualifications system,

vocational education standards and competency-based courses in collaboration with various enterprises. The establishment of a networking system is also needed to encourage participation of enterprises, communities, local authorities, and cooperative networks for education provided by vocational education institutions both in the country and abroad. The systems for research and development, and knowledge management will be strengthened to enhance the quality of vocational education on a continuous basis.

Therefore, according to current situation, problems, and the above-mentioned ideas for enhancing the quality of vocational education, there is a need to establish the systems for research and development center in commercial colleges. Efforts will be made to produce and establish the educational media that can effectively support teaching and learning, and other educational activities. This will comply with the National Education Act of B.E. 2542 in Chapter 9, Section 63 - 69 (Office of the National Education Council, 1999), which there is a need to develop an ideal management model to serve as an educational technology center in commercial colleges. The study will carry out to design and propose a candidate management model of the educational technology center in five commercial colleges in Thailand.

## OBJECTIVES

To study and design an ideal management model for educational technology centers to be established in commercial colleges in Thailand.

## RESEARCH QUESTIONS

This study attempted to answer the following questions, i.e., whether the fundamental factors in managing educational technology center are really effective and efficient in supporting the teaching activities in commercial college, and to what certain decree do these factors contribute in managing the given educational technology center as effective as possible. In addition, whether there are any of the most effective and efficient management models to run educational technology center.

## CONCEPTUAL FRAMEWORK

The main functions and characteristics of learning resources center have been well documented by five educators and technologists. De Kieffer (1965) proposed that it should be consisted of five aspects, i.e., informing, educating and training, supplying, producing, and assisting. Warangkoon (1969) stated that the administration of educational technology or learning resources center should consist of eight aspects, i.e., the building that housed the center, personnel management, media administration, tool and equipment administration, media production, training, orientation, and budgeting. Ruangsuwan (1983) proposed that the administration of educational technology center or learning resources center in colleges and universities should contain the major activities, i.e., media selection and provision, registering, preparing media and equipment, utilizing services, material maintenance, material production, educating and training, and personnel management. Poomipark (1986) stated that the administration of educational technology center or learning resources center in colleges and universities should contain the major activities as follows: selecting and using equipment; media and audio - visual material production; educating and training; research; and administration. Wang (1994) stated that the basic philosophy of organization and management of a learning resource center was to maximize the effectiveness and efficiency for the use of all learning resources, to establish proper management control, and to be cost effectiveness. Considering the quality for any learning resource center, it should include accountability, consistent service, reliable professional consulting and standardized procedures. A centralized organization and a total control management system are one of the best choices.

It has been shown that there are several names of the educational technology center have been called. However, the infrastructures and functions are quite similar to each other by dividing into four or five divisions as described by several well-known educationists. Deshchaisri (1996) described that educational technology center should

consist of three departments, i.e., secretariat, production and services, and promotion and development. Chanprasopshoke (1998) indicated that educational technology and communication center comprised four divisions, i.e., administration, service, production and research and development division. Warnsong (1998) proposed that educational technology center should consist of five sections, i.e., secretariat, research and development and training, production of audio - visual materials, audio - visual materials services, and educational media services. Poomcharoen (1998) described that educational technology center should consist of six sections, i.e., production, service, provision, maintenance, administrative service, and development. Sangsuda (1999) proposed that the organization structure of learning resource center should be divided into three departments, i.e., administrative, services, and technical. Thongsai (1999) indicated that educational technology center should have five divisions, i.e., secretariat office, production division, service division, technical division, and promotion and development division.

Based on the afore-mentioned concepts of all educators and technologists, it can be concluded that at least five aspects of services should be provided in order to serve as an ideal educational technology center. The five aspects are material production and provision, visual aids, building and facilities in the center, budget, and orientation and training in how to use the equipment.

The five aspects of services that should be provided by the educational technology center could be formed as the conceptual framework as shown in Figure 1.

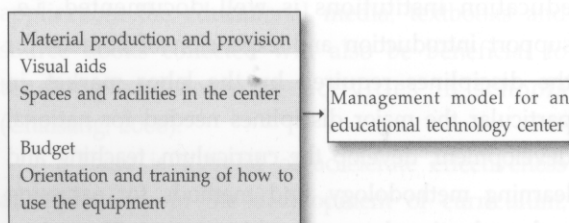


Figure 1. A diagram showing conceptual framework of the proposed management model.

## RESEARCH METHODOLOGY

The information concerning the administration of educational technology center in commercial colleges and universities under the umbrella of the Ministry of Education in Thailand was searched from all available documents. It was found that the educational technology center had been called in various names, such as Audio - Visual Center, Educational Technology and Innovation Center, Instructional Media Center, Learning Resources Center, Educational Technology Center, Academic Resources Center (Ruangsawan, 1983). This agrees with the concept of Nilsook (1998) who stated that there were too many names of educational technology center. Several names have been used, i.e., Audio - Visual Education Center, Audio - Visual Center, Audio - Visual Equipment Center, Educational Technology Center, Educational Communication and Technology Center, Educational Technology and Innovation Center, Media Center, Instructional Media Center, Educational Media Center, Media Resources Center, Educational Resources Center, Learning Resources Center, Academic Resources Center, and Media Services Center. However, the idea of management of the center was classified into two management models, i.e., managed by separating non - printed material or audio - visual services from printed material or library services, and managed by including audio - visual services or non - printed material or library services.

Ruangsawan (1983) stated that the management of the educational technology center was divided into two models, i.e., centralization of separate library and audio - visual services, and centralization of instructional media center services. The

management model of the first one was set up by separating non - printed material or audio - visual services from printed material or library services, while the second model of the center was set up by including non - printed material or audio - visual services with printed material or library services. The second one is sometimes called "Instructional Media Center" or IMC.

The services that usually required and expected from teachers and administrators in five commercial colleges are categorized into 5 items, i.e., material production and provision, visual aids, building and facilities in the center, budget, and orientation and training in how to use the equipment.

The study was done by collecting data from 201 teachers and 25 administrators in five public commercial colleges under the jurisdiction of the Office of Vocational Education Commission, Department of Vocational Education, Ministry of Education, i.e., Chetupon Commercial College, Thonburi Commercial College, Bangna Commercial College, Intrachai Commercial College, and Bungphra Phitsanulok Commercial College.

The questionnaires were sampling from a population of 446 teachers and administrators of the five commercial colleges based on a sample size determined by Krejcie and Morgan (1970, as cited in Srisa-ad, 1995: 187 - 188). Only 226 sets (201 of teachers and 25 of administrators) of returned questionnaires were selected using Stratified Random Sampling, and 210 sets were subsequently selected. The proportion of the subjects in each college is shown in Table 1.

**Table 1.** The numbers of teacher and administrator populations that were used in the study.

No.	Institution	Teacher		Administrator	
		Population size	Sample size	Population size	Sample size
1	Chetupon Commercial College	101	48	5	5
2	Thonburi Commercial College	116	55	5	5
3	Bangna Commercial College	98	47	5	5
4	Intrachai Commercial College	48	23	5	5
5	Bungphra Phitsanulok Commercial College	58	28	5	5
<b>Total</b>		<b>421</b>	<b>201</b>	<b>25</b>	<b>25</b>

The questionnaire with an estimate value scale determined by the arbitrary weighting method was used. Each item in the questionnaire was measured on 5 - point scales based on Likert's method (Wangpanich, 1987: 154 - 155), and supplemented with notes for clarifying the content by five specialists consisting of a linguist, a specialist in administration, a curriculum specialist, and an educational technology specialist. Thirty teachers in the five commercial colleges who were excluded from the sample group were asked to fill out the questionnaire. The questionnaires were subsequently tested for reliability by means of the Alpha-Coefficient. The questionnaire contained three parts and consisted of 114 items. The first part dealt with the respondents' background, which was consisting of seven items. The second part dealt with problems in services that they faced in the educational technology centers, which was consisting of 50 items. The third part dealt with what item that they really needed from the centers, which was consisting of 57 items. The result of a reliability test yielded 0.93 of reliability for the second part, and 0.95 for the third part. The questionnaire covered five aspects of services provided by the educational technology centers as follows, i.e., material production and provision, audio - visual aids, space and facilities in the center, budget, and orientation and training in how to use the equipment.

Two hundred and twenty six questionnaires were sent to teachers and administrators of the afore-mentioned five commercial colleges requesting for cooperation in the study. One copy each of questionnaires was given out to a total of the 226 teachers and administrators. Only 210 copies of questionnaires were returned, which was equivalent to 92.92%. The questionnaires were subsequently checked for the completion and for further analysis.

The data obtained from part 2 and part 3 of questionnaires were analyzed by using computerized program to determine mean ( $X$ ) and standard deviation (S.D.). The results of the analysis of part 2 that dealt with problems in services found in the educational technology centers, and part 3

that dealt with what the teachers and administrators really needed to revamp the centers were interpreted as follows:

The rating scale of problems that currently found in the educational technology centers was used in part 2.

The degree of problem	Values of mean
Highest	4.50 - 5.00
Highly	3.50 - 4.99
Moderate	2.50 - 3.49
Low	1.50 - 2.49
Very low	1.00 - 1.49

The rating scale of needs to revamp the educational technology centers was used in part 3.

The degree of requirement	Values of mean
Very strongly	4.50 - 5.00
Strong	3.50 - 4.49
Moderate	2.50 - 3.49
Low	1.50 - 2.49
Very low	1.00 - 1.49

## RESULTS

It was shown that budget, orientation and training of how to use the equipment, material production and provision, and audio-visual aids, were ranked as serious problems, while the spaces that housed the centers and their facilities were ranked as medium problems, as shown in Table 2. According to the needs of teachers and administrators, orientation and training of how to use the equipment, material production and provision, visual aids and budget were ranked as high priorities. The teachers and administrators were satisfied with the spaces and facilities in the centers, as shown in Table 3.

**Table 2.** The rating scale of problems in educational technology centers according to the teachers and administrators in the commercial colleges analyzed by computerized program. The sample size was 210 questionnaires.

No.	Items	The seriousness of the problem		
		$\bar{X}$	S.D.	Level of problems
1	Budget	3.87	1.13	serious
2	Orientation and training of how to use the equipments	3.79	1.04	serious
3	Material production and provision	3.65	1.04	serious
4	Audio-visual aids	3.60	1.04	serious
5	Spaces and facilities in the center	3.32	1.21	medium
<b>Total average</b>		<b>3.65</b>	<b>1.09</b>	<b>Serious</b>

**Table 3.** Results of analysis of the needs of 210 teachers and administrators in the commercial colleges to revamp the center.

No.	Items	The seriousness of the problem		
		$\bar{X}$	S.D.	Level of problems
1	Orientation and training of how to use the equipments	4.66	0.60	Very strong
2	Material production and provision	4.58	0.72	Very strong
3	Audio-visual aids	4.57	0.67	Very strong
4	Budget	4.53	0.72	Very strong
5	Spaces and facilities in the center	4.47	0.73	Moderate
<b>Total average</b>		<b>4.56</b>	<b>0.69</b>	<b>Very strong</b>

The management systems in educational technology centers were also studied in comparison with other colleges and universities. Several educational technology centers were selected: audio - visual division, central library, King Mongkut's Institute of Technology Ladkrabang; Institute for Technical Education Development (ITED), King Mongkut's Institute of Technology North Bangkok; Center for Educational Media and Technology, Srinakharinwirot University; Office of Instructional Media, Thonburi Vocational College; Office of Instructional Media, Saowabha Vocational College;

and Office of Instructional Media, Eam La-or Vocational College. The study was carried out by observation from real sites and interviewing the relevant high executives of each institute who were in charge of those given educational technology centers.

The infrastructures found in the centers at other colleges and universities: audio - visual division, central library, King Mongkut's Institute of Technology Ladkrabang; Institute for Technical Education Development, ITED; King Mongkut's Institute of Technology North Bangkok; Center for

Educational Media and Technology, Srinakharinwirot University; Office of Instructional Media, Thonburi Vocational College; Office of Instructional Media, Saowabha Vocational College; and Office of Instructional Media, Eam La-or Vocational College, were noted and summarized belows:

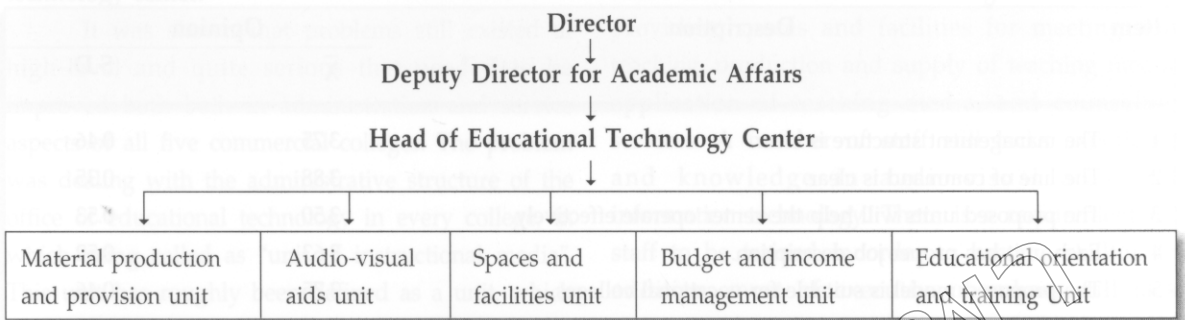
There are several types of infrastructure of the offices found in those selected centers. It depends upon the size of the institutes and scope of services. The administrative structure is complicated with missions- internal and external issues for those large academic institutes, i.e., Srinakharinwirot University, King Mongkut's Institute of Technology Ladkrabang, and King Mongkut's Institute of Technology North Bangkok. Thus, the infrastructures are comprised of several units, e.g., media production unit, services of media and audio - visual aids unit, maintenance of audio - visual aids unit, technical services unit, research and development unit, research and training unit, etc. Moreover, there are three colleges- Thonburi Vocational College, Saowabha Vocational College, and Eam La-or Vocational College in which have the similar administrative structure. The infrastructure is quite simple and not complicated. It is organized to serve as the main relevant unit for educational technology or audio - visual aids, and called "the Office of Instructional Media". The academic department directly supervises the office. It is of interesting to note that there are no subdivisions like those found in the large institutions.

It was found that the operation units of the center were categorized into five units, i.e., material production and provision unit, audio - visual aids, spaces and facilities in the center, budget procurement unit, and orientation and training unit that were responsible for training of how to use the equipments. The operation of the centers in those large institutions, i.e., Srinakharinwirot University, King Mongkut's Institute of Technology Ladkrabang, and King Mongkut's Institute of Technology North Bangkok, was seldom face severe

difficulty on administration; even more serious about the shortage of spaces and facilities, budget and staff. One of them could independently manage the budget procurement in terms of full-scaled business as demonstrated in the education department, Institute for Technical Education Development (ITED), King Mongkut's Institute of Technology North Bangkok.

Once it was compared with vocational colleges, there were some difficulties found in the area of administration among those three vocational colleges, i.e., Thonburi Vocational College, Saowabha Vocational College, and Eam La-or Vocational College, where there were some limitation concerning budget, staff, and spaces and facilities. These limitations may lead to other difficulties that relating to limitation on material production and provision unit, services of media and audio - visual aids, arrangement of spaces and facilities on operation, as well as training and supervision on application of media and new educational technology for instructors. Consequently, working of instructional media would lose the role in efficiently promoting and supporting the process of education and students' learning - corresponding to rapid change of technological progression. Moreover, this problems may lead the operation not to agree with the aim of National Education Acts of B.E. 2542, sections 9, and 63 - 69 issued about educational technology as well (Office of the National Education Council, 1999: 32-34)

Results of thoroughly analysis of data collected in this study led to a development of a proposed management model of educational technology center that might be appropriate to operate in Thai commercial colleges. This management model of the education technology center was submitted for an assessment to a group of 11 specialists. The schematic diagram of the proposed model is shown in Figure 3.

**Figure 3.** The proposed management model of educational technology center.

### ASSESSMENT

The proposed management model was submitted for the assessment to a group of 11 educational specialists. The assessment was done through a focus group. The specialists were invited from the Faculty of Industrial Education, King Mongkut's Institute of Technology Ladkrabang. The specialists reviewed the proposed management model and gave their point of views, criticisms and suggestions concerning the analysis results and the possible appropriate way of managing the center in Thai commercial colleges. They mostly agreed that the management of educational technology had the likelihood to be practiced in reality. The institution should adopt functional organization management technique as the tasks that should be assigned to the staff according to the ability of the staff. This technique is suitable for small institution, which has flexibility and less complexity. The task assignment of each unit in the center will cover the main tasks of main organization or institution to produce and give audio-visual education and educational technology service, especially in the given five commercial colleges. A majority of experts suggested that the proposed management model should be slightly modified. The suggestions made by experts were summarized as follows, i.e., some units in the center should merge together to make it more simple such as spaces and facilities unit, and budget and income management unit should be merged into administration unit of educational technology center.

Some of the unit should be disbanded and changed for a suitable name. In addition, the center should consist of four divisions rather than five divisions. Spaces and facilities unit and budget and income management unit were merged together and renamed as Administration Unit. The unit responsible for providing educational technology training programs and communication method was renamed as Research and Development Unit. Once the modification had been completed, most of the experts agreed that the management model was more likely to be appropriated for Thai commercial colleges. Every unit has a flexibility and efficiency in coordinating with other units in the center and academies. The tasks of the units cover a comprehensive service to students and instructors. The proposed management model is expected to be effective when being used in Thai commercial colleges. The assessment results are shown in Table 4.

The assessment criteria were based on the value of mean derived from an analysis.

Mean value	Level of opinion
4.50 - 5.00	strongly agree
3.50 - 4.49	agree
2.50 - 3.49	uncertain
1.50 - 2.49	disagree
1.00 - 1.49	strongly disagree

**Table 4.** Opinions of experts concerning the proposed management model of educational technology center.

Item	Description	Opinion	
		$\bar{X}$	S.D.
1	The management structure is clear.	3.75	0.46
2	The line of command is clear.	3.88	0.35
3	The proposed units will help the center operate effectively.	3.50	0.53
4	Each unit has proper job description.	3.63	0.52
5	The proposed model is suitable for vocational colleges.	3.75	0.46
6	The number of units is appropriate.	4.00	0.53
7	Each unit has a clear job description.	4.00	0.53
8	Each unit has a proper amount of work.	3.75	0.71
9	The separation of the production unit and the services unit will help the center operate effectively.	4.38	0.52
10	The model can be applied to other educational institutions.	4.00	0.53
<b>Total average</b>		<b>3.86</b>	<b>0.55</b>

According to the results shown in Table 4, it can be seen that most experts agreed to the proposed management model where the average value of  $\bar{X} = 3.86$ . They thought that it was appropriate and feasible to the situation found in Thai commercial colleges. Their suggestions concluded that there should be only four units with the following responsibilities:

**Administration unit.** This unit is dealing with general office work, staff management, office supplies and registration, building maintenance, provision and coordination with other units.

**Material production and provision unit.** This unit is dealing with the production of various kinds of materials, such as photographs, transparencies, slides, graphic materials, printed materials, videos, VCDs, audio tapes, CAI, internet and e-learning and provision of materials and audio-visual equipments.

**Audio-visual aids unit.** This unit is dealing with the preparation of materials and audio-visual equipment, registration of materials and audio-visual equipments, introduction of new materials, maintenance of materials and equipment, lending

materials and equipments, giving advice on how to use materials and equipment, duplicating materials and publicizing the center's services.

**Research and development unit.** This unit is dealing with the development of educational materials, educational technology training, promoting the use of materials and educational technology, disseminating educational technology and giving advice on educational technology.

## DISCUSSION

The objective of this study was aimed at developing a proper and efficient management model of educational technology center that will be responsible for providing services in educational technology or audio - visual educational works in Thai commercial colleges under the Department of Vocational Education (which is known as the Office of Vocational Education Commission). It would effectively support the education system for both instructors and students, especially during the period of globalization. Hence, it would be useful to investigate relevant issues dealing with the management of educational technology center.

### Problems concerning administration of educational technology center.

It was shown that problems still existed at high-level and quite serious that needed to be improved both both in administration and service aspects of all five commercial colleges. The problem was dealing with the administrative structure of the office of educational technology in every college, in which being called as "unit of instructional media". This unit has roughly been defined as a unit, which is run under the supervision of the Vice Academic Director. The Vice Academic Director is currently called Deputy Director for Academic Affairs of the college. However, it is practically not clear about job descriptions in terms of division of relevant units and offices. The numbers of units needed to be divided according to the responsibility for each unit, interrelationship between units, material and equipment supplies, the numbers of relating staff, which could manage the task of operation and service properly and efficiently. On the other hand, the instructional-media work unit was responsible for supporting and facilitating instructors who used the media and audio-visual aids, and equipments. In addition to the afore-mentioned services, it also supplied all audio-visual aids that were used in education. The staff of this unit was responsible for preserving, collecting, maintenance of devices and equipments to be well equipped and ready for use. They also provided services on audio-visual education, counselling and instructing about problems of application of devices and equipments as well as audio-visual aids for instructors and students (Chetupon Commercial College 2004; 2-3). To these ends, instructional media units of five colleges are still not obviously different from each other. They just serve as units providing too limited services on audio-visual education for instructors and students, such as lending a few of instructional medias that mostly are old-fashioned and incompatible with the lesson's contents. The unit is used as a meeting room and lecture room, which mostly are lack of various high technology devices, but there are some basic tools available, i.e., amplifier, projector, visualizer, CD, or VDO player etc.

In current situations, the role of the instructional media units is dealing with services in providing spaces and facilities for meeting and teaching, production and supply of teaching media, application of teaching media, and counseling services. A number of staff still lacks experience and knowledge in audio-visual aids and information technology. There is a requirement for staff to be trained in order to become skillful. In addition, most of executive members still lack visions on how to use information technology and application of instructional medias. They seem to pay more attention to individual capabilities in using teaching medias and information technology, despite the facts that there are several ways of teaching processes to promote lifelong learning instead of depending upon individual capabilities. There are several factors to consider in order to improve the learning process of students through the instructional media units. The vision of institute's executive members who look after the instructional media units, the readiness of staff, good planning and cooperation are very important factors. Lumley (1995) had documented that whether the services of instructional media center model be transformed or not are depended on several factors. Those factors were consisting of visions of administrators of the instructional media center, quality development of staff in the center, providing supporting staff to the existing technologists, the availability of curriculum planning in collaboration with educational technologists, and supporting spirit in all aspects from executive members.

Results of this study suggested that there were some limitations in five categories, i.e., budget, orientation and training in how to use the equipments, material production and provision, audio-visual aids, and spaces and facilities in the center.

**Budget.** It was found that budget for procurement of supplies was the most important issue among other problems concerning the administration of educational technology center in Thai commercial colleges. It was clear that this

problem was correlated to the vision of executive members of the center and supporting spirit from executive members. There is a need to have executive members with good visions, clearly determining objectives, and management goals in order to keep the services of the educational technology center to run smoothly. This will lead to a proper budget planning to support the center. The conclusion made from this study agreed very well with the idea of Sanithwong Na Ayutthaya (1987). It was documented that it was necessary for executives to determine objectives whether which direction would be the goal, then set a period and management procedure in terms of how to do. The responsibility of each unit to handle the entire assignment to reach the goal was given out as job descriptions. Hence, if the executives lack clear vision to develop the center in systematical way and they do not intend to give full support, it would be assumed that the operation of the center would lose continuous development and lack clear concrete as well as efficiency. In addition, this will affect budget allocation for the development of educational technology center being incompatible with reality and real needs of education development at current situations.

**Orientation and training of how to use the equipments.** It was clearly shown that educational technology center paid a little role in providing services for training to promote an understanding of educational technology as well as training of how to use media and audiovisual aids for instructors, especially those concerning the production of instructional medias with an appropriate application of instructional media and audiovisual aids. These finding was quite relevant to the study of Deshchaisri (1996:153). It was documented that offices of educational technology of the institute should be responsible for providing training activities to permanent instructors concerning media production and application resulting in efficient teaching. Thus, offices of educational technology of Thai commercial colleges should provide services in establishing training activity for instructors to improve their knowledge,

understanding about new educational technology, and to produce instructional medias as well as providing basic knowledge of choosing and application of medias with highly efficient teaching job.

**Material production and provision.** It was shown that the services in production and provision of material in Thai commercial colleges were still far behind the standards found in other Thai universities. This was presumably caused by lack of skilful staff who works in material production and provision unit. In addition, the unit was lack of devices and equipments used for producing modern medias. This finding was correlated with the deficiency of supporting spirit and proper policy from original affiliation offices of the Office of Board of Vocational Education, and executives of the institute. Hence, the Office of Board of Vocational Education should emphasize on promoting research and development relating to the production and development of educational technology. The evaluation should be made following the promoting efforts in order to make sure that it meets the worthiness and suitability in compatible with learning process of Thai people as stated in National Education Acts of B.E. 2542 (1999), chapter 9, section 67 (Office of the National Education Council, 1999: 33).

**Audio - visual aids.** It was also found that the problem related to audio-visual aids still existed with the degree of seriousness and was rated at high-level degree. The problem was probably caused by same factors that related to material production and provision unit. There is a need to recruit new skilful staff to overcome this problem. The qualified staff will give efficient services in counseling for the application of medias and audio-visual aids, and deliver services on medias and audio-visual aids, as well as searching for information from outside sources to transfer to instructors and users. Thus, it could be implied that the major cause of problem was related to the lack of budget and educational technology staff. Therefore, Ministry of Education and original affiliation offices of these five Thai commercial

colleges and Office of Board of Vocational Education should adopt the policy to provide support to promote, and to develop educational technology for Thai commercial colleges to catch up with the changes leading to globalization. The budget should be allocated to the existing centers in the amount which enough for procurement of equipments to be used for media production, to recruit skilful staff that will be responsible for the afore-mentioned efforts. Ruangsuwan (1983) stated that the service center for instructional media should provide services which permit instructors and instructional media specialists to work together in planning and setting up goal in order to meet the maximal needs on instructional media. Moreover, executives of each commercial college should pay more attention and support the centers to serve as an efficient unit that supporting the teaching of all instructors and learning of the students.

**Spaces and facilities in the center.** It was found that the rating scale of opinion concerning problem related to spaces and facilities in the center was ranked as moderate level. The list of facilities that required by teachers and administrators who participated in this study was summarized as follows: TV program production room, graphic production room, audio-visual aids and other equipment-fixing and repair room, sound recording room, service areas used for media application, media lending and returning. Nateprasert (2000) reported that there were several offices dealing with production and services within technology and educational communication organization. Those offices were regarded as principle offices in which they served as unit of graphic production, unit of slides and scenes production, unit of VDO tape and educational TV program production, unit of sound recording, unit of instructional media services, unit of multimedia and network production, and unit of exhibition broadcasting. All of the mentioned units have different functions, thus, the spaces should be designed to fit for their functions. If the spaces and facilities were well managed, it would be beneficial and convenient to the production and services of

many instructional medias in terms of quality, up date, fast and efficiency.

#### **Requirements for improving the administration of the educational technology center.**

The finding suggests that there is a need to improve the administration of the educational technology center in Thai commercial college, which is based on the results of the analysis of data obtained in questionnaires. The opinion obtained from returned questionnaire concerning the requirement for improving the administration of the educational technology center rated as the highest need among all needs. One of interesting things is that the name of office in all college is called "instructional media section." Its roles are responsible for promoting, supporting, cooperating, and facilitating instructors to produce and use instructional medias. The job description was also extended to the provision of audio-visual aids and educational equipments for teaching job, taking care of all equipments, give counselling to all users concerning information relating to the application of the equipments, preparing the operating proposal, as well as other assigned tasks from supervisors (Chetupon Commercial College, 2004: 2-3). However, the current performance of the unit is below the average due to several factors of limitation as shown in previous sections. Therefore, in order to meet the requirement of education reform as stated in the National Education Act year 1999, chapter 9, sections 63 - 69, there is a need to revamp the services of the educational technology center.

Results of analysis of information obtained from the returned questionnaires were used as a guideline to draw up a proposed management model of the educational technology center. Once the proposed management model was submitted to a group of experts, it was recommended that the services or functions of the center should consist of five sections. The individual section should have different services or functions, such as dealing with orientation and training of how to use the equipments, providing of material production,

providing and services of audio-visual aids, allocation of enough budget, and providing of ample spaces and facilities in the center. All of the given functions will play active roles in enhancing student-center method, self-learning system.

The job description of the proposed management model should comprise of specific services and functions of five individual sections. The specific services and functions of individual sections of the educational technology center will be discussed as follows:

Services on orientation and training of how to use the equipment should be the first priority to consider. Since there was a very low number of staff of each unit qualified for the assigned job. According to the statement in the document published by Ruangsuwan (1983), the instructional media center should provide services for instructors and instructional media-specialists could cooperate in setting up goals that make the services of the center meet the requirements. The center should also provide training of how to produce educational media and the application of media for the staff. The unit should provide training for instructors and students concerning the advantages of new educational technology and instructional technology. It is very important that the staff of the unit should provide services on orientation and training of how to use the equipments and media to students and instructors. The afore-mentioned proposed management role of the unit was quite relevant to the statement published by Thaweekulsab (2000), which stated that training of educational technology and communication would assist in using education resources with maximal benefit and was the special tool for human resource development. Moreover, training of educational technology and communication was the services of knowledge and experience, attitudes, value, educational technology and communication skilfulness that could not be found within the realm of ordinary educational process.

The production and provision of materials or instructional and educational medias to be used and to provide service in the unit were considered as

the second priority to the orientation and training section. Medias should correlate to the subject-contents, easy to use in order to assist the educational process. The cost of production and provision of the medias should be in an economic scale. Medias should be more useful and beneficial to instructors and students. The available of media is on hand make instructors tend to use educational media in the increasing scale. It is hoped that the proposed management of the center should provide more efficient services than the existing one. In general, the center has the responsibility to produce and provide instructional materials or medias for instructors and students. However, due to the limited budget and qualified staff, it leads to difficulties in management of the services that currently found in the unit resulting in substandard of quality of education. The instructors were suffering from the shortage of the media and had to rely on their own capabilities by lending or renting media from other sources outside the college. Thaweekulsab (2000) has mentioned that media supply for servicing purpose in the institution should be provided by means of purchase, exchange, rent, and collection from donation. Therefore, the executives of educational technology center should be aware of the role of the production and provision of medias.

It was found that the opinion concerning the remobilization in audio - visual aids section was rated as the highest level of needs. This finding is related to the fact that a high number of the instructors is still lacking of skill for the application of the media and audio-visual aids. It takes too much time and too difficult for the instructors to prepare media for their own use in teaching. Hence, it would be beneficial to have staff or personnel assist instructors to overcome these problems. This will encourage instructors to get more familiar with new high technology media.

The opinion concerning budget that allocated for all functions and services of the center was rated as one of the highest level of needs. The limitation of budget was directly affecting the ability and efficiency of services delivering on audio-visual aids,

educational technology, the willingness of staff whom delivering the services, and readiness of the facilities themselves. Therefore, the executives of the center should be aware of the role on services and functions of the center, which need full supporting effort in terms of allocated budget.

The opinion concerning spaces and facilities in the center to provide full services was rated as the high level of needs. There is no educational technology center in all five commercial colleges that have their own spaces and facilities from the beginning. They are currently located at some areas of the building. The spaces are not fit for being the education centers due to several factors, i.e., the building does not provide a convenient user contact, noisy surrounding, no sufficient and appropriate spaces for fixing, keeping and maintenance of instruments and audio-visual aids as well as operation room of staff, and lack of good working atmosphere. Most of the opinion obtained from returned questionnaires suggested that more modern, appropriate, and convenient spaces and facilities should be provided to serve as a good educational technology center to promote the good services and performances to users and the centers' staff.

#### **A proposed management model of educational technology center for commercial colleges in Thailand.**

The information concerning the management and administration of educational technology centers in other academic institutes were obtained from interviewing of executives and staff of the given six institutions, i.e., King Mongkut's Institute of Technology Ladkrabang, King Mongkut's Institute of Technology North Bangkok, Srinakharinwirot University, Thonburi Vocational College, Saowabha Vocational College, and Eam La-Or Vocational College.

The educational technology center in each institution has different infrastructure, style of functions and responsibility of individual sections of the center. It depends on size of institutes, scope of services or job description of each section in the

center. The large-scale academic institutes, such as universities or institutes have a very complex infrastructure with a complicated functions and services of the center. The infrastructure of the unit comprise of several sections, i.e., section that responsible for media production, section that dealing with services on media and audio-visual aids, section that dealing with maintenance of audio-visual aids, the technical section, section that dealing with research and development, and section that dealing with training and research. Meanwhile, the center in small scale academic institutes or colleges has the similar infrastructure of the center. The management of the center in terms of line of command or administration are very simple. The job description of the educational technology center is responsible for specific assignments that related to educational technology or audio-visual aids. Thus, the functions and services of the unit are under the responsibility of academic affairs with a very simple infrastructure as oppose to the large-scale academic institutions.

The management of the center in terms of operation unit was also investigated. The functions of the center were divided into five aspects, i.e., the production and provision of media, services of media for instructors and students, the mobilization of spaces and facilities within the educational technology center, budget allocation for procurement of all necessary materials or equipments, services dealing with training and supervision on the application of media and educational technology. Results from observation and interviewing with relevant executives of other institutions showed that large-scale institutes or university did not have problems concerning the mobilization of spaces and facilities, budget, and shortage of staff. The large-scale institutions could independently procure revenues by means of business management such as the instructional media. However, the center under the administration of small-scale institutes or colleges was still facing some problems relating to budget, staff, spaces, and facilities. These limitations lead to substandard of services and functions of the center.

The proposed management model of the educational technology center was developed from the problems that mentioned previously and results of the analysis of data obtained from the returned questionnaire. The proposed management model had been analyzed by Focus group and approved by a group of 11 experts. The recommendation made by the committee of experts suggested that the proposed model was appropriate to serve as the educational technology center in Thai commercial colleges. The advantages and disadvantages of the proposed management model can be summarized as follows:

After process of Focus Group, the administrative pattern of educational technology center that researcher proposed, has already been approved by 11 specialists and they have concluded that the proposed management model is suitable and appropriate for the educational technology center in Thai commercial colleges. The infrastructure of the educational technology center should comprise of four sections, i.e., the material production and provision unit, the audio-visual aids unit, the administration unit, and the research and development unit, due to small size of the institution or college. This will lead to a simple administrative pattern concerning services and functions of the center resulting in an effectively management of the center. The functions and services in each unit and an interrelationship between each unit are flexible, fast, and effective with successfully outcome. This will encourage more instructors and students to come and use the facilities in the center.

There are some disadvantages of being small-size educational technology center such as limited budget to run the center, limitation in number of staff, and vision of the administrators concerning functions and services of the center. The limitation of budget is the major obstacle for the management of the center resulting in difficulties to obtain enough amounts of instrument and media, difficulties in recruitment of new qualified staff for providing services, and maintenance of all facilities

and services. Thus, there is a need to obtain full support from administrators starting from the grass root level to the Minister of Education. The executive members of the Office of Vocational Education Commission should be aware of this problem and should seek all means to support the idea of revamping the educational technology center to become the candidate management model of the center for Thai commercial colleges.

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