Requirements of E-Learning for Learning Management of Teacher and Student in General Education

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Abstract - **e-Learning is an innovative approach to learning and more important role of all the technologies in the supporting collaboration, document management and knowledge management. The objective of this research was to study requirements of e-Learning for learning management of teacher and student in General Education. The Samples consisted of 30 teachers and 320 students, selected by stratified random sampling technique who registered in General Education, first semester academic year 2017. The Interviews consisted of 5 experts, selected by purposive random sampling who had more than ten years of teaching experience in Education Technology.**

The research instruments ware questionnaires and oral question. The statics for analyzing data ware descriptive statistics consisting of frequencies, mean, standard invitation. The result shown that requirements of e-Learning for learning management of teachers at the high level (Mean=3.86) and student at the high level (Mean=3.97). For the result of the interview with experts have confirmed that e-Learning is suitable to solve one of the problems in teaching in General Education. The problem is there are a lot of students per room which resulting in difficulty learning between teachers and learners. Thus, the results can be developed in the teaching and learning in the General Education.

Keywords - **Requirements, E-Learning, Learning Management, Experts, General Education**

I. INTRODUCTION

The Thai National Education Plan of the 20-year National Strategy (2017-2026) specifies a vision that "Every Thai people must have adequate education and lifelong learning, a happy life in accordance with the philosophy of sufficiency economy and rapid changes in the 21st century" [5]. The plan has 4 main objectives: 1) Develop an efficient and high-quality education management system, 2) Develop the Thai people to be good citizens with skills and abilities needed by the Thai constitution, the National Education Act and the National Strategy, 3) Develop the Thai society to be one of learning with ethics, moral, and unity for homogeneous, sustainable development per the philosophy of sufficiency economy, and 4) Solve problems of middle income trap and domestic income disparity [10].

In the 21st Century skills [2] is suitable learning style to solve one of the problems in teaching in general education. The problem is there are a lot of students per room which resulting in difficulty learning between teachers and learners. This 21st Century process learning is not only responding to the problem but also to the influence of technology in this era. Moreover, it also responds to the

provisions of the Education Act of 2542 (1999) and Amendment (No. 2) [11] which aims to increase opportunities for communication between teachers and students by using digital instruction media. The 21st century, education management is changed with focus on necessary life skills, one of said life skills in digital literacy. E-Learning's importance increases to the point which learning at anytime and anywhere, not limited to classrooms or schools, is possible [4].

Moreover, this also support individualized instruction and lifelong learning that can satisfy the learner's willingness to learn, research and thinking skills favourably. E-Learning is a type of education management that supplement classroom education as an alternative choice that does not rely only on the teacher, but the learner can learn from the environment and other sources, including the Internet. E-Learning is not meant to totally replace traditional classrooms, but simply is another choice that can supplement classroom knowledge. Also, varied forms of education management also encourage better learning process that is personalized to the learner. The goal of individualized instruction is the learner is held responsible for his or her own learning [1].

The learner will be encouraged to be a lifelong learner instead of a learner under forced conditions, with focus on learning instead of teaching. The learner's interest, needs and feeling will be emphasized. The learner will also have a self-assessment." The ability to self-educate is critical to individualized instruction that should be emphasized in the modern world. However, while self-education is good, knowing only oneself and living in one's own world without understanding of others or holistic thinking is what instructors should be mindful of. In this type of education, instructors' role is changed from that of teacher to that of coach. In the traditional classroom, the teacher has the biggest role, thus the classroom is centred on the teacher instead of the learner. Also, the learner has different level of educational opportunity, depend on learning style of each. E-Learning will allow independent, self-control of learning. The role of the teacher will be that of a guide that can suggest new learning methods and guideline, and facilitate learning. In this type of education, the learner will become the researcher, as the teacher's role changes, the learner's role should also change. The learner will not only receive instructions, but research, create and utilize knowledge. Classroom-based instruction will become web-based instruction which e-Learning is done on the Internet [6].

Aside from the teacher that is well-versed in content, there are also the programmer, the content assistant, the expert and the guardian that must participate in the knowledge management in order to get maximum efficiency as when the knowledge management is freed from the classroom, participants are also no longer limited to the teacher and the learner.

The General Education is an integrated course that promotes and develops student's knowledge of language, communication and information technology to research and present their work in various forms. Communication in Multicultural society uses Information and Communication Technology (ICT) wisely and realize social risks, be aware of ethics in language and technology as well as having Information Literacy skills to be a complete human being.

II. LITERATURE REVIEWS

After the Digital Age, distance learning appeared in the form of correspondence courses in the 1890s-1920s and later radio and television broadcast of courses and early forms of e-learning. Typically, fewer than five percent of the students would complete a course. The 2000s saw changes in online, or e-Learning. advances in information technology and new developments in learning science provides opportunities to create well-designed, Student-centered learning, engaging, interactive, affordable, efficient, easily accessible, flexible, meaningful, distributed, and facilitated e-Learning environments. Each stage of the e-Learning

process requires thoughtful analysis and investigation of how to use the Internet's potential in concert with instructional design principles and issues important to various dimensions of the E-Learning environment.

Badrul Khan's [3] eight-dimensional e-learning framework is a detailed self-assessment instrument for institutions to organize their evaluation of educational technology (e-learning) readiness and opportunities for growth. The framework provides a structure for systematically reviewing initiatives and programs, so that desired learning outcomes are achieved. The framework is composed of eight dimensions, each reviewed by practical checklists of 50 - 70 questions. The checklist does not include a scoring system, but serves as an instrument that verifies that each area is cultivated.

E-Learning occupies a high place in universities and academic institutes and it is given the priority by the departments in these educational institutions. Usually, new systems fail because the end users do not accept to use. Either because they do not see any benefits from using these systems or they see these systems too complex which cause a lot of troubles for them. E-Learning system is one of these new systems that can be accepted or rejected by end users.

According to Ozkan and Koseler [4], E-learning systems are multidisciplinary, where the success of E-learning depends on two factors:

- Technological factor, i.e. software and hardware that are used to build e-Learning system.

- Human factor, i.e. students and instructors.

Therefore, institutions venturing onto e-Learning initiatives should explore "What does it take to create a successful e-Learning experience for diverse learners?" Numerous factors help to create a meaningful e-Learning environment [7]. After reflecting on these, Khan developed A Framework for e-Learning. The seeds for the e-Learning Framework began germinating with the question "What does it take to provide the best and most meaningful open, flexible, and distributed learning environments for learners worldwide?" The framework has eight dimensions: institutional, pedagogical, technological, interface design, evaluation, management, resource support, and ethical.

Each dimension has several subdimensions each consisting of issues focused on a specific aspect of an e-Learning environment. The eight dimensions and sub-dimensions of the e-Learning Framework:

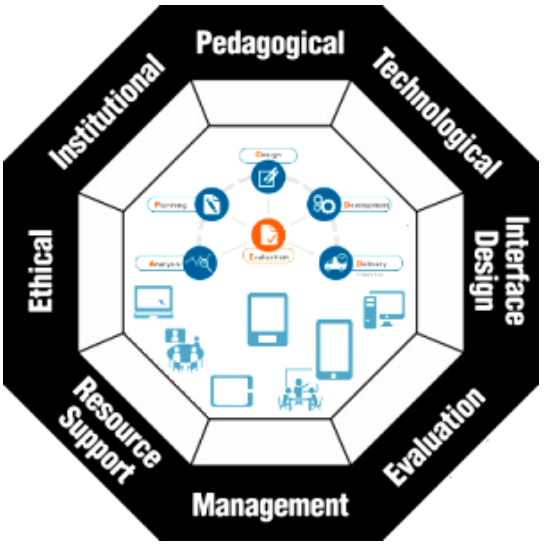

Fig. 1 The Khan Model is the Framework for E-Learning [3].

Khan's framework was developed as a response to questions from readers requesting to see exemplars of effective Web-based instruction as defined in Web-Based Instruction (1997). The framework does not constitute a model because it does not prescribe a specific process for developing educational technology environments.

However, it does take into consideration the design, development, delivery, and evaluation of web-based and hybrid instruction and can provide guidance in:

1. The institutional dimension is concerned with issues of administrative affairs (e.g., organization and change, accreditation, budgeting, and return on investment, information technology services, instructional development

and media services, marketing, admissions, graduation, and alumni affairs); academic affairs (e.g., faculty and staff support, instructional affairs, workload, class size, compensation, and intellectual property rights); and student services (e.g., pre-enrolment services, course and program information, orientation, advising, counselling, financial aid, registration and payment, library support, bookstore, social support network, tutorial services, internship and employment services, and other services) related to e-Learning.

2. The pedagogical dimension of e-Learning refers to teaching and learning. This dimension addresses issues concerning goals/objectives, content, design approach, organization, methods and strategies, and medium of e-Learning environments. Various e-learning methods and strategies include presentation, demonstration, drill and practice, tutorials, games, storytelling, simulations, role-playing, discussion, interaction, modelling, facilitation, collaboration, debate, field trips, apprenticeship, case studies, generative development, and motivation.

3. The technological dimension of the framework examines issues of technology infrastructure in e-Learning environments. This includes infrastructure planning, hardware, and software.

4. The interface design refers to the overall look and feel of e-learning programs. Interface design dimension encompasses page and site design, content design, navigation, and usability testing.

5. The evaluation for e-Learning includes both assessment of learners and evaluation of the instruction and learning environment.

6. The management of e-Learning refers to the maintenance of learning environment and distribution of information.

7. The resource support dimension of the framework examines the online support (e.g., instructional/counselling support, technical support, career counselling services, other online support services) and resources (i.e., both online and offline) required to foster meaningful learning environments.

8. The ethical considerations of e-Learning relate to social and cultural diversity, bias, geographical diversity, learner diversity, information accessibility, etiquette, and the legal issues (e.g., policy and guidelines, privacy, plagiarism, copyright). The eight dimensions of the e-Learning framework, a brief description, and sample survey questions are provided in the table below. The survey questions are intended to assess the presence of the framework dimensions at an institution as well as identify areas where adjustments to infrastructure, process, practice, or faculty development may be considered.

III. METHODOLOGY OF THE RESEARCH

A. Population and Sample Group

The population is separated into 3 groups as follow:

1. **Teacher:** 88 teachers in general education course of which 30 are sampled by stratified random sampling.

2. **Student:** 3,200 students enrolled in General Education course, first semester, academic year 2017, of which 320 are sampled by stratified random sampling.

3. **Expert:** 5 instructors with over 10 years of experience in undergraduate teaching. The 5 instructors are selected by purposive sampling.

B. Research Tools and Data Analysis

Research tools used in the study are designed to conform with the research objective and literature review of credible sources. The tools are then evaluated by experts using Cronbach's Alpha Coefficient [8] until the acceptable coefficient is obtained. Accuracy of the survey is evaluated by 5 experts in 3 following parts:

1. Teacher's requirements of e-Learning for Learning Management in General Education.

2. Student's requirements of e-Learning for Learning Management in General Education.

3. Expert opinion of e-Learning for Learning Management in General Education.

The survey uses Likert-type scale. The sample groups are appointed for data collection for further analysis.

Data analysis is divided into 2 parts: 1) Data analysis by using descriptive statistics such as mean and standard deviation and 2) Qualitative data analysis by synthesis of interview.

IV. RESULT OF THE RESEACH

Result of the data analysis can be divided into three parts: requirements of e-Learning for Learning Management of Teacher and Student in General Education and the expert's opinion.

TABLE I
TEACHER'S REQUIREMENTS OF E-LEARNING FOR LEARNING MANAGEMENT IN GENERAL EDUCATION.

Teacher's requirements	Mean	S. D.	Level
1. Curriculum	3.79	0.62	High
2. Personal	4.05	0.29	Highest
3. Infrastructure and Support	4.28	0.33	Highest
4. Learning Management System	4.10	0.39	Highest
5. Quality Assurance	3.94	0.41	High
6. Evaluation	3.71	0.64	High
7. Ethics	3.82	0.78	High
Total	**3.86**	**0.59**	**High**

It can be seen in Table I, that the overall needs for e-Learning of the teacher is high (Mean=3.86, SD=0.29) with infrastructure and support, personnel, and learning management system rated highest.

TABLE II
STUDENT'S REQUIREMENTS OF E-LEARNING FOR LEARNING MANAGEMENT IN GENERAL EDUCATION.

Student's requirements	Mean	S. D.	Level
1. Curriculum	3.93	0.52	High
2. Personal	3.91	0.24	High
3. Infrastructure and Support	4.19	0.33	Highest
4. Learning Management System	4.22	0.27	Highest
5. Quality Assurance	3.94	0.59	High
6. Evaluation	3.90	0.51	High
7. Ethics	3.44	0.61	Medium
Total	**3.97**	**0.43**	**High**

It can be seen in Table II, that the overall needs for e-Learning of the student is high (Mean=3.97, SD=0.43) with infrastructure and support, and learning management system rated highest, while ethics is rated only medium.

1. The teacher uses e-Learning as supplementary media without modification of teaching method. The teacher simply describes the content and tell the student to study from e-learning media. If e-Learning media is not designed to attract the learner's attention, the learner would eventually discontinue the use of e-Learning due to lack of motivation. E-Learning

would be a wasted investment.

2. E-Learning investment must cover accessibility by both the teacher and the learner. For e-Learning to function efficiently, facilities must be provided to allow communication and quick content search and access. Without communication and accessibility advantages, e-Learning would be seen as an unnecessary investment that does not offer any real benefit.

3. E-Learning design that is unsuitable for the learner. For example, undergraduates in Thailand are mostly teenagers, therefore e-learning must be designed in accordance with learning psychology that focuses on constant interaction, both with the content itself, other learners or the teacher. Content presentation must have good clarity, accuracy, and attractiveness that can draw the learner's attention. For example, presentation could be done by using multimedia or non-linear presentation which allows the learner to choose what to study.

V. DISCUSSION

The study of needs for e-learning for learning management of the teacher and student in general education course consists of 7 facets: 1) Curriculum, 2) Personnel, 3) Infrastructure, 4) Learning Management, 5) Quality assurance, 6) evaluation, and 7) ethics. Result of this study reveals that the overall needs is rated high, which concurs with the study by Panida Nootawee [6] on the needs for e-learning of the university teacher and learner, and Patchara Kongmoh [7] on development of online classroom for teachers of Thanyaburi Rajamangala University of Technology. It can be discussed as follows:

1. Curriculum the General Education learning management is an integration between various sciences that promotes learning skills in the 21st century, in concurrence with the general education course that focuses on promotion of lifelong learning. To increase attractiveness of the class, the teacher must utilize technology or website to design a more diverse and modern teaching in concurrence with the course such as exercise and post-lesson activities in the form of animation, game, student participation and interaction between the learner and teacher. This is to create a more efficient learning management.

2. Personal as there are many learners compared to only 2-3 teachers, management is extremely difficult. E-Learning could be used to alleviate this problem. However, as each teacher has a different level of information technology competence, the teacher should be trained and advised by IT experts before and during classes.

3. Infrastructure and Support. The teacher must prepare content, lesson, activities, and games that are accurate and complete with connection to outside sources to provide additional extra-classroom sources, along with advertisement, announcement, review and timely notification.

4. Learning Management The management dimension addresses the continuation, updating, and upkeep of the learning environment. This continuation may be used to determine whether the educational technology atmosphere is performing adequately, and whether the instruction is meeting its intent. This dimension also addresses issues of quality control, budgeting, staffing, security, and scheduling of this type can also decrease the use of paper and save budget.

5. Quality Assurance often overlooked, Quality Assurance for e-Learning is vital to digital learning design. A solid QA process reduces work for your stakeholders and reviewers because it eliminates all preventable bugs and errors.

6. Before you release content, improving the learner experience.

7. Evaluation The teacher can evaluate the student with comprehensiveness, speed, accuracy, clarity and reliability. The learner can be notified in timely manner through web board, e-mail, telephone or chatroom. Moreover, the learner can receive personalized evaluation and check learning schedule,

examination and academic works.

8. Ethics The teacher should put in ethical lessons during teaching such as punctuality, honesty, cooperation, originality, politeness in discussion and respect between the teacher and learner.

The 5 experts that have over 10 years of experience in university teaching are interviewed and the result can be discussed as follows:

The 5 experts give opinions on introduction of e-learning in learning management of general education course. As general education course is a basic course that integrates traditional teaching and activity-based teaching, there are strength and weakness. The most obvious strength is the easier learning management and e-Learning is suitable learning style to solve one of the problems in teaching in general education. The problem is there are a lot of students per room which resulting in difficulty learning between teachers and learners and can be accessed anytime, anywhere and by any device. Paperwork and expenditure are also decreased. Weaknesses are that learning management support factors are inadequate, such as unstable internet connection and interaction between the teacher and the learner. The agency may have to draft an additional SWOT [9] plan prior to learning development.

VI. CONCLUSIONS

The study reveals that the requirements of e-Learning for learning management of the teacher and student in General Education course are in the same general direction. The learner can join with the teacher for instance to identify problems that student interest, group activities, in order that students can analyse and integrate with other courses by themselves. Said learning management can respond to Information Communication and Technology (ICT) needs and promote learning skills in the 21st century, which is in line with the general education course that promote lifelong learning. E-Learning can be applied in management of classrooms with high number of students to reduce social disparities and increase accessibility. However, the teacher that is interested in using e-Learning as a supplementary or primary source must provide full cooperation during design and development phase in order to get the best e-Learning media. The most important thing the teacher should take care of in introduction of e-Learning in learning management is a study on a suitable system for the curriculum, personal, learning style, infrastructure and support, quality assurance, evaluation and ethics in accordance with the course, in order to maximize learning efficiency and quality.

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(Arranged in the order of citation in the same fashion as the case of Footnotes.)

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