Competencies of University Instructors in Facilitating Student Learning in One Thai Technological University

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Abstract— *This paper purposes to study and investigate the ability to facilitate learning. It also explores awareness of the importance of being able to facilitate learning. The research design was an exploratory sequential mixed-method. Data gathering in the qualitative part was a semi-structured in-depth interview, which took part with a Vice President for Academic Affairs and Deans from 11 Faculties. The quantitative data collecting from 335 university instructors used an online questionnaire. The results show that facilitating student learning competency consists of 12 competency domains, including Core Knowledge, Curriculum and Learning Management, Computing and ICT literacy, Learning Evaluation, Learning Psychology, International Literacy, Professional Ethics, Transformational Leadership, Instructor's Social Engagement, Higher Education Legislation, Learning Attitude, and 21st Century Skills Set. In addition, Instructors at the selected university have a high level of awareness of the importance of facilitating students' learning in 12 domains with an average score of 4.00 and above. Moreover, the level of existing competence in facilitating student learning was at a high level with an average of 3.70 and a standard deviation of 0.798. The highest scores were the Professional Ethics Domain and the lowest was the International Literacy Domain.*

Keywords— **Competency, learning facilitator, modern teaching, Burapha university.**

1. INTRODUCTION

According to the standard of Thai Education 2018, the education system focuses on improving the learning for working and the qualities of a good life. The desired outcomes of education were creating learner characteristics to be Thais 4.0. The goal of each education level has different content complexity to follow the level. In higher education there are three characteristics of skills set as follows: 1) skill of lifelong learning, flexible working, leadership skills, good knowledge, honesty and securing work for qualities of good life and family; 2) students can be a co-creator of sustainable innovation and social problem-solving skills for a value-added society; 3) ability to be active citizens and brave against doing wrong, self-development for reducing conflict. Moreover, shared value is perseverance, sufficiency, democracy equality, morality, discipline, to be honest, and responsible for them [1].

In the university, for the lecture, the most important goal is to motivate students to achieve graduate qualifications. The lecturer must have some skill for motivation associated with the learning process until they can apply the course content to real life. So, the lecturer is a person who can move the students to graduate qualifications of university goals and the lecturer should know the Objective Key Result (OKR), know the university vision and know all the rules of the university. However, personal self-development and being a punctual person is a big deal for lecturers for establishing exemplary behavior to the student. [2]

In addition, a new generation of lecturer needs many skills for teaching and evaluating the student such as planning and designing learning activities, the process of learning, establishing a positive classroom atmosphere that can help students learn better, support learning activities in the classroom and learning beyond the classroom, self-development and lifelong self-development.

Moreover, a new generation of lecturer needs many skills for teaching and evaluating the student such as planning and designing learning activities, the process of learning, establishing a positive classroom atmosphere that can help students learn better, support learning activities in the classroom and learning beyond the classroom, self-development and lifelong self-development.

Thailand has developed human resources through the educational system systematically and continuously for a long time. Concrete evidence is the enactment of the National Education Act since 1999 [3], which aims to unify education administration and management and have clear guidelines for implementation. In the year 2017, the National Education Act was revised. The guidelines for the development of education are set out in the 20-year National Strategic Plan (2017-2036) and the 12th National Economic and Social Development Plan 2017-2021.[4]

The plan has set a National Strategy for 20 years, 6 issues, including balancing and developing government management systems, security, creating growth in quality of life that is environmentally friendly, creating

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competitiveness, creating equality and equal opportunities in Society, develop and enhance the potential of the people towards the target for Thailand to have a stable, wealthy and sustainable people. Therefore, the strength of this new national strategy is to set human resource development as a primary goal, which is a universal concept and an important indicator of success in the national strategy.[4]

In higher education like the university, there are many challenges to prepare for revolutions in the 21st century [5], the challenges faced by universities follow: 1) the decreases of child population from 21.6 percent in 2007 to 17.2 percent in 2017; 2) An increase in the number and type of universities to about 300 universities in Thailand like state university, other universities, Rajabhat University, Rajamangala university, Institutes of physical education, Colleges of agriculture; 3) in 2019 young people attending university equaled 81,230 people but the university can accept 109,129 people, so the vacant seats in universities is 27,000 people, it is considered to be the lowest number in 10 years. For these reasons, the university must adapt to support many challenges in the future.

In the 21st century, education will differ from the present. In the future work and education will become the same thing. Lifelong learning is the challenge and motivation to change student behavior; it is an important factor for changing the study pattern. In the future university, the students can choose many options about the way for learning, they can learn anytime and anywhere. The universities become an organization for learning and support learning media such as online media, digital media, and artificial intelligence media. Work experience will be a system where a part of learning can integrate with working and learning together [5].

Therefore, the role of the instructors in the university must change the process of teaching, the instructors should learn and develop the learning process, not only teach but instructors must find the best way of facilitating student learning as well

This research focuses on human resource development in a higher education institution, starting with a group of instructors who are the most important in changing the education system of Thailand into the 21st century. The aims of the study are to study what modern teaching competencies need to be and information for designing a competencies framework for facilitating student learning. The results of this research are extremely beneficial to educational institutions in determining human resource development policies in higher education institutions in the future.

2. 2. LITERATURE REVIEW

2.1 Thai teaching professional standards framework

Thailand does not have a professional standards framework for teaching that is enforced by law. Therefore, the Office of the Higher Education Commission (2015), which is the responsible agency for the quality of teaching in a higher education institution, has established the guidelines for promoting the quality of teaching in higher education institutions as a working manual. Universities can use this manual to create their own teaching standards professional framework.

The document aims to promote and encourage teachers in higher education institutions to develop themselves to have competencies and efficiency in teaching and learning. Details of teaching in higher education institutions are divided into three components [6] 1) Knowledge; consists of two dimensions, knowledge in the science of their subjects and knowledge in teaching and learning science. 2) Competencies; consisting of four dimensions, design, and plan for effective learning activities of learners, effective learning activities, enhancing the learning atmosphere and supporting learners, and learning evaluation while providing positive feedback. 3) Values; consist of two dimensions, professional and continuous self-development, and maintaining the professional ethics of instructors.

2.2 Interesting modern teaching competency

Competencies of modern instructors in the role of facilitators in learning, give more importance to individual student development. The Office of the Education Council at the Ministry of Education has researched the development of mechanisms for driving high-performance teacher production systems for Thailand 4.0. Teacher performance consists of 6 core competencies: 1) General Knowledge and Ability 2) Professional Knowledge and Understanding 3) Professional Skills 4) Attitude and Values 5) Professional Practice 6) Professional Engagement [7].

The results also indicate that high-performance teachers for Thailand 4.0 should have competencies in the line of work, including 1) Vocational skills, namely teaching and learning management skills. 2) Communication skills to develop students and skills in the development of students with different abilities, self-responsibility, the profession, and society. Therefore, both core competencies and job competencies increase ties between learners and instructors. Competency in analyzing individual learners is essential to modern teachers, to be used in the development of teaching plans to suit the characteristics of different individuals.

The development of core competencies in the modern teaching of instructors in higher education institutions both in Thailand and abroad is aimed at developing teaching and learning centers focused on student achievement. Results-oriented teaching skills include the design and assessment of subjects and courses, the integration of educational information technology with subjects and courses, improving the effectiveness of teaching, and organizational development.

Study and research on modern teaching competencies using different names, such as the performance of teachers in the 21st century, modern teaching skills, competencies of university teachers in Thailand 4.0 era. However, the components of the details within the performance are similar.

According to the United Kingdom professional standards framework (UKPSF), education organizations in higher education have conducted research studies to determine their own Teaching and Learning Professional

Standards Framework, including the Ministry of Education of Thailand, which produced PSF guidelines [8]. The consequence is confusion about the competencies required to teach and develop the instructor. The researcher has collected and synthesized data from the research study about a facilitator for learning from 14 sources [9], [19].

Table 1. List of capabilities discovered by content extraction

Item	List of competencies
1	Organizing learning activities
2	Design, measure and evaluate in accordance with learning outcomes
3	Learning evaluation method
4	Learning activity design
5	Learning activity planning
6	Educational psychology, motivation, and stimulation of individual learning
7	Professionally competent, Content knowledge.
8	Concepts, key principles, and applications of the main content
9	Techniques and methods of teaching
10	Creating a learning atmosphere
11	Using a variety of techniques and methods of teaching
12	Transfer and integration of lessons
13	Knowledge and technical skills
14	Curriculum, creation, use, and development
15	Synthesis of courses and separate teaching units
16	Teaching preparation
17	Create a lesson plan
18	Academic work, including publications
19	Participate in the professional community with continuous professional development
20	Supporting Professional Learning community
21	Pedagogical content knowledge-PCK
22	Research methodology skills
23	Ability in the research process
24	Communication and presentation
25	Using IT for education
26	Using IoT and Digital content
27	Legislation in Higher education standards
28	Use of foreign languages
29	Follow the ethics of teachers in the organization
30	Finding research funding sources
31	Research evaluation
32	Utilization of research results
33	Systematic and continuous knowledge creation
34	Feedback and report the result
35	Promote lifelong learning
36	Teach and support learning
37	Production of media, equipment and teaching materials
38	Personal competence
39	Change agent
40	Educational quality assurance focus on teaching
41	Understand Thai identity, pride in citizenship
42	Produce graduates with knowledge and virtue

The synthesis of modern teaching abilities by using information that has been studied on the job as a learning facilitator reveals that the names and types of competencies are different. However, this information is a good starting point for discovering the ability of modern-day professors.

3. RESEARCH METHODOLOGY

The research on competency in facilitating student learning by teachers in one Thai technological university aims 1) to study competencies for facilitating student learning from the management's perspective and secondary data. 2) to investigate the competency of being a facilitator for learning of instructors in technology universities. 3) to explore the perception of the importance of competency in facilitating student learning by instructors in technology universities. There are three research questions consisting of 1) What is the expected competency in facilitating student learning of instructors at the University of Technology? 2) What is the existing ability to be a learning facilitator of instructors in technology universities compared to the expected competency? 3) How much recognition is there of the importance of competency in facilitating student learning by the instructors in the technology university?. The area of study is Rajamangala University of Technology Isan. The research methodology was an exploratory sequential mixed-method design. The population consisted of 1,501 university instructors. The sample consisted of 12 interviewees, a Vice President for Academic Affairs and Deans from 11 Faculties. The respondents were 335 instructors. Qualitative research tools are the semi-structured in-depth-interview guide. The data collection for the quantitative part used questionnaires. The data collection method is online by Google application. The participants will answer the questions via the internet and the results saved to electronic files automatically. The

duration of the research is from January 2019 - October 2019.

The research process begins with a survey of basic information about new teaching competencies from an executive's perspective with semi-structured in-depth interviews. The interviewees were 12 university administrators. After that, the data from the interview was integrated with the secondary data, to form a standard framework for competency as a facilitator of learning. The model of the standard framework was used to do the questionnaire in two parts: the first part included questions about personal factors in 8 items and the second part was the competency of being a facilitator of learning in 12 domains with 72 questionnaire questions.

The questionnaire was used to survey the level of perception of the importance of competency and the existence of competencies in learning facilitation of the teachers in the selected technological university, using a sample group of 335 people. The questionnaire was answered using the Google Form computer program for respondents to answer via the internet.

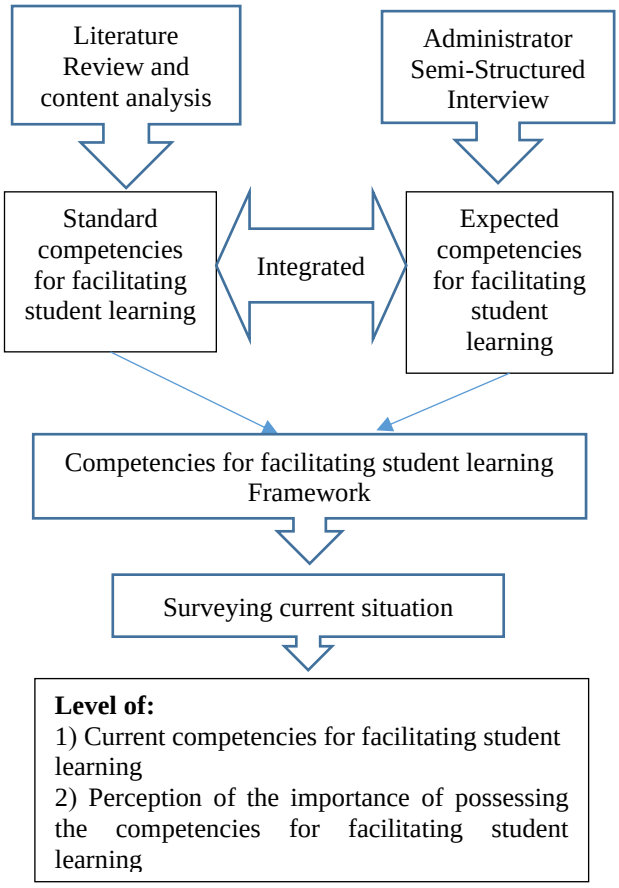

Fig 1. Stages of research development.

4. 4. RESULTS AND DISCUSSION

4.1 The modern teaching competency from administrator's perspective

Theme 1: Competency in facilitating learning

The researcher used in-depth interview semi-structured techniques to interview the administrators of the technological university used as a study area 12 persons, including the Vice President for Academic Affairs, and 11 Deans. Then, the data from the interview was analyzed for quality data by using computer software AtlasTi. The results of the in-depth interview from the executive point of view showed that the competencies that facilitated the learning of the selected technological university instructors are in the following Table.

Table 2. Competency for modern instructors from an administrator's perspective

Item	List of Competency
1.	Digital literacy
2.	Dynamic core knowledge
3.	Knowing individual learners
4.	Compassion
5.	International language
6.	Core knowledge
7.	Knowing individual learners
8.	Design of learning activity
9.	Evaluation
10.	Positive attitude
11.	Social engagement
12.	Critical thinking
13.	Education technology
14.	Can-do attitude
15.	Student-centered attitude
16.	Creative thinking
17.	Collaboration and teamwork
18.	Ethics
19.	Transformative leadership
20.	Service mind
21.	Education legislation
22.	Learning
23.	Research
24.	Mindset student center
25.	Kindness

The data obtained in the table will be integrated with the data from the content analysis.

Theme 2: Existing competencies of the instructors from administrator's perspective

Regarding the level of proficiency of instructors at the selected technological university, the instructors are currently divided into three age groups, the first group is the senior teachers, the second group is the middle age group and a third group is a group of new generation

teachers. All three groups will have different levels of competency.

Table 3 Characteristic of teachers divided by age groups

Age groups	Remarkable feature	Limitation
Senior instructors	- Good attitude - Passionate and transfer Knowledge fully -Individually developed a method of teaching	- Physical performance - Worsening health - Changes in technology - Adaptation to internationalization difficulty
Middle age instructors	- Attitude adaptable - Generation to Generation Learning (G to G)	- Depend on the role model that they perceived
New generation	- Computer and ICT literacy - Ready to learn all new things	- Pedagogical content knowledge (PCK) - Too self-confident

In the first group, senior instructors have a high level of knowledge competency both in theory and in practice. In addition, they have a very good attitude to being university instructors. Everyone loves being a teacher. Everyone is passionate and will transfer knowledge to students fully. However, adults are limited in terms of physical performance. Higher age worsening health is an obstacle to practical teaching. The most important thing that is limited in this group of teachers is the change in technology. Digital literacy in modern education has made this older group of teachers have difficulty tracking modern teaching technology. Another limitation is the adaptation to internationalization, such as English language skills. This group of teachers will adjust quite slowly.

The second group is the middle age group; this group of teachers has skills in terms of the attitude that can be developed and teaching competencies in both theory and practice. This group of instructors can adapt and learn into the new teaching process in every item of competency. The methods used to develop the teaching skills of this group of teachers were the transfer of models from generation to generation. The obstacle of this group of teachers depends on the model and culture of the organization in being a good teacher. If the model organization and culture of being a good teacher is an excellent one, this group will act as good teachers with the correct attitude. However, if any organization or faculty has a negative role or the management of the organization is poor, this group will also be cultivated to have the knowledge, skills, and attitudes which are negative as well.

The third group is the new generation of instructors. This group will have advantages in computer and ICT literacy and new age performance. Whether it is problem-based learning, project-based learning or other active learning processes, the new generation is ready. Moreover, this group will be well able to adapt and develop internationally. However, the obstacle of the new generation of teachers that administrators have found is the teaching skills, practical experience, or professional teaching experience. Each person is not experienced enough to develop himself to become an expert in the aforementioned areas. Most of them have a direct doctorate in their academic field, but lack teaching capability and abilities transferring knowledge to modern learners. This group therefore urgently needs to develop competencies in pedagogy content knowledge (PCK).

4.2 The expected competency framework

Modeling of a professional standards framework for teachers for use in this study. Starting from the synthesis of data from the content analysis obtained from Table 1 and data from the perspective of the management in Table 2 were integrated, it was possible to achieve a facilitating student learning competencies framework for teachers at the selected technological university. By determining the frequency of duplicate performance items and considering similar competencies, finally, regrouping into the required 12 competency domains with 41 sub-domains, including core knowledge, curriculum and learning management, computing and ICT literacy, learning evaluation, learning psychology, international literacy, professional ethics, transformational leadership, instructors social engagement, higher education legislation, learning attitude, and 21st century skills.

Table 4 The expected competency framework in facilitating student learning

Domains	Sub-Domains
1.Core knowledge	1.The development of knowledge, the main content according to changes from discoveries.
	2.Skills in the main content that indicate the expertise of the teachers in the field of teaching
	3.The ability to apply the content of the teaching to link with the profession
	4.Teaching skills transfer and integrated lessons
	5.Research competency
2.Curriculum and learning management	6.Philosophy of higher education curriculum and teaching
	7.Curriculum synthesis for course separation for teaching units
	8.Curriculum development

	9.Design of learning activities
	10.Making lesson plans
	11.Teaching Preparation
	12.German Meister Teaching Techniques
	13.CDIO teaching techniques
	14.Teaching utilizing learners' interaction, such as PBL, RBL.
	15.Techniques for teaching online or e-learning
3.Computing and ICT literacy	16.The use of IT for education includes the production of teaching materials and teaching aids.
	17.Using IT in daily life
	18.Using IT for work
4.Learning evaluation	19.Principles and methods of learning evaluation
	20.Design measurements and assessments that are in line with learning activities.
	21.Creative reflection of results for student development
5.Learning psychology	22.Analysis to motivate and formulate individual learner development plans
	23.Motivation and inspiration for studying
	24.Creating a learning atmosphere
6.International literacy	25.Use of foreign languages for communication and daily use including teaching and work
	26.Collaboration with foreign countries in the teaching profession
7.Professional Ethics	27.Follow the professional ethics of teachers
8.Transformational leadership	28.Leadership for Change
9.Instructor's social engagement	29.Participate in a professional community. Share with others in the learning management
	30.Participation in all-round social development valuable to society
	31.Continuous participation in professional development and education within the workplace such as becoming embedded in the workplace
10.Higher education legislation	32.Higher education standards for graduate characteristics
	33.Educational quality assurance focusing on teaching
11.Learning attitude	34.Competency in the attitude of working with people in the organization. Including having a can-do attitude
	35.Positive attitude competency. Have a love of being a teacher, which will have a good heart basis and encourage motivation for learners.
	36.The attitude that changed from teacher-centered to student-centered learning.
12.The rest of 5 C in 21st century skills	37.Cooperation capability, teamwork and leadership
	38.Creative and innovative thinking competencies
	39.Analytical thinking competency, critical thinking, and problem-solving
	40.Competency in morality, compassion, understanding, and discipline
	41.Competency in having a service mind.

The expected competency framework for student learning facilitation that is shown in the above table, was developed from the integration of data from content analysis and semi-structured in-depth interviews using the overlay methods. Then the researcher considered the competencies with techniques that consist of eliminating, combining, rearranging, and simplifying. This expected competency framework was the answer to the first research question. After that, using the competency model to develop a questionnaire, that was used to explore the level of awareness of the importance of the competencies and the existence of competencies discovered.

4.3 The results of data analysis regarding the perceived importance of competency and existing competencies

The results of the survey from the questionnaires were analyzed in two levels: analyzing the average score of all questions in total and analyzing each domain of competencies. The statistics used in the analysis are comparison of mean and standard deviation. Then, the results obtained from the analysis are compared with the specified criteria to determine whether the level of perceived importance of competency and the existence of competence in the teaching facilitation of the teachers are at a high level, moderate, or less.

The results of the average score analysis Standard

Deviation and the average ranking of perceived importance levels and the existing ability to be a facilitator of learning in the selected technological university came from using the descriptive analysis which is a mean and standard deviation. The survey is divided into two issues: 1) the competency level of the facilitator of learning and 2) the perceived importance level of competency in encouraging learning in both areas. There are 72 questions altogether. The analysis results found that for both the perceived significance level and existing performance there was a high average score. In recognition of the importance, it has a mean of 4.50 and a standard deviation of 0.632. For the existing performance, the level has a mean of 3.70 standard deviation of 0.798.

Data analysis of the average scores by domains, there were 12 domains, the analysis results are in the Table shown as follows.

Table 5. Average score and standard deviation of perceived significance level and the existing level of competency as a facilitator in learning by competency domain

Recognition of importance		Competency Domain	Existing competency	
SD	Mean		Mean	*SD*
0.400	4.65	Core knowledge (ECK)	4.05	0.477
0.462	4.48	Curriculum and Learning Management (CLM)	3.79	0.662
0.569	4.48	Computing and ICT literacy (ICT)	3.71	0.515
0.567	4.37	Learning Evaluation (LE)	3.69	0.734
0.512	4.53	Learning Psychology (LP)	3.62	0.629
0.512	4.53	International Literacy (IL)	2.84	0.789
0.690	4.31	Professional Ethics (PE)	4.52	0.613
0.700	4.37	Transformational Leadership (TL)	3.77	0.673
0.521	4.51	Instructors in Social Engagement (ISE)	3.59	0.801
0.700	4.37	Higher Education Legislation (HEL)	3.68	0.796
0.459	4.66	Learning Attitude (LA)	4.21	0.626
0.521	4.51	21st Century Skills (21C)	4.02	0.563
0.551	4.48	Average	3.79	0.657

From the ranking of the average scores in descending order from the highest in recognizing the importance of competency in being a facilitator of learning, it was found that the learning attitude domain is the highest average of 4.66 with a standard deviation of 0.459. The lowest mean score of the level of perceived importance of performance was the professional ethics domain with an average of 4.31 and with a standard deviation of 0.690.

From the ranking of the average scores in descending order from the highest in existing competency of being a facilitator of learning, it was found that the learning attitude domain is the highest average of 4.21 and with a standard deviation of 0.626. The lowest mean score of the level of existing competency was the international literacy domain with an average of 2.84 and with a standard deviation of 0.789.

4.4 Discussion of research findings

Concerning the competencies in facilitating the learning of instructors in the selected technological university, there were some interesting points that the researcher has chosen for the discussion. First, developing a new style of teaching competency. Second, the Administrator's perspective in modern teaching competencies. Third, the facilitating student learning category. Finally, a new paradigm of the instructor in terms of role, function, and responsibility.

4.4.1 Developing a new style of teaching competency

Modern teaching ability in the meaning of this research means the process of transferring knowledge from the instructor to the learner using 21st century teaching principles to make learning effective. After the students have passed through modern teaching, students must display the necessary characteristics according to the standards set by the educational level. This is demonstrated by taking into account the characteristics of learners in explaining basic information, previous knowledge base, learning characteristics, goals and limitations of learners. All this is in line with the definition of competency of Rajamangala University of Technology Phra Nakhon, which has written definitions and development processes for competency development. [10] The process begins with data collection. The next step is to create a prototype of the performance benchmark. Then using the competency standard framework to assess the existing competencies of university instructors. The process of establishing the competency standardization of Rajamangala University of Technology Phra Nakhon is consistent with the process of studying the competencies in facilitating learning, which begins with collecting secondary data and examining the administrator’s perspective. After that, creating a standard framework of the competency for facilitating student learning. Finally, proceeding to utilize the standard framework of competency to explore the existing competencies of the university instructors.

4.4.2 Administrator's perspective in modern teaching competencies

The perspective of the executives in this research found that being a university of the future involves not only teaching but also has many additional responsibilities. The additional responsibilities become the competency that the instructor has to learn and apply to design the learning climate. One executive said that the university should perform duties similar to a company that is, having a department to work off-campus, and then developing the experience from working from the outside. This will hopefully create harmonious learning for students. The concept corresponds with the research of Kalama [9] that has studied international trade in the teacher competency research: by reviewing this research related to teacher competence in Europe and then drawing conclusions, the results showed that the ability of teachers still needed further research because there are still different categories. More than that, it also addresses research that is essential to the ability of teachers to keep them up-to-date. There is also a group of researchers with a different point of view suggesting the need for competency in teaching in multiple domains. Many countries require standards for teaching competencies but this is still a body of knowledge that needs ongoing research. G. Venkatraman's study therefore continuously supports the concept of research on teacher competencies according to the results of this study, both 12 new domains, and sub-domains of teaching competencies. [9]

4.4.3 Facilitating student learning category

When comparing the result of this research finding with the guidelines for promoting the quality of teaching and learning of teachers in higher education institutions, which was conducted by the Higher Education Commission, it was found that there was a similar direction [6] (Higher Education Commission, 2015). The Office of the Higher Education Commission has specified competence in teaching eight domains. There are domains that are similar to this research, such as the core knowledge or knowledge in the subjects taught, designing and planning for effective learning activities for learners, effective implementation of learning activities, enhancing the learning atmosphere, and support the learning of the learner includes the measurement and evaluation of learners as well as being able to provide creative feedback. All recognize the value of teacher development and continuous self-development, recognizing that professional ethics matters.

The difference that is suggested in this research is only the quality level of the teachers. In the guidance of establishing a professional qualification framework for teachers, most have quality levels for quality classifying of the teaching performance of each level. However, this research has already compiled and created the overall performance expected. It easier for the university, when they intended to classify a quality level, it only distinguishes the levels of competency, especially focusing on knowledge, competency, skills, and attitude. The modern teaching developed in this study is a model that is consistent with the Standard Professional Framework for Teaching of Turkey [11]. Although the name and number of competencies in the framework were not the same, however, they have very similar meanings. Competencies for the teaching profession of Turkey has changed the format of the professional standards for teachers to achieve effective learning since 2017. This change requires teachers to focus on being a learning facilitator of learners by determining the key competencies in 6 areas: 1) Personal and professional values - professional development 2) Getting to know the student, 3) Learning and teaching process, 4) Monitoring and assessing the learning and development of students, 5) School, family, and community relations, 6) Curriculum and subject content knowledge.

Moreover, the research finding that one of the new competencies of the teacher was professional ethics, which has never been classified as a competency of the teacher in the past. This finding was in line with the studies of Mr. Wat Bhunkob [12], whose study was on the topic of the development of the necessary competencies of the teachers at Ramkhamhaeng University. The objective of the study was to investigate the competencies of the teachers at Ramkhamhaeng University. The research found that the instructors of Ramkhamhaeng University have competencies according to the university mission of six competencies, namely producing graduates with knowledge of morality, values, and ethics, with the idea of instilling moral values.

4.5 Theoretical contribution

These are some points that the researcher has chosen for the theoretical contribution. First, the differentiation in the meaning of the modern teaching competency of research participants. Second, modern teaching competency changing characteristics. Third, the new modern teaching competencies of the selected technological university. Finally, a new paradigm of the instructor in terms of role, function, and responsibility.

4.5.1 The differentiation in the meaning of the modern teaching competency of research participants

The interviewees had a different understanding of the new teaching competencies of the research participants, therefore the researcher had to create the same understanding. At least two interviewees have defined the teaching competencies, referring to the university's mission assigned by the Higher Education Commission, including teaching management, research, academic services, and the maintenance of art and culture. Also, many research papers give the same meaning, which is different from the definition of competency in this research. In this research, the study focuses on the competency of instructors, not including the abilities of the university. However, the researcher explained the meaning of the new teaching competencies used in the research with the same understanding before the interview and most interviewees had the same understanding.

4.5.2 The modern teaching competency changing characteristics

The new teaching competency, from the perspective of administrators, has many interesting changes. Change one concerned the original name but the meaning has changed more and more. An example of this type of change is the cognitive competencies in the subjects taught. In the past, the measurement of knowledge of teachers would be observed from educational qualifications. Nowadays, in addition to academic qualifications, teachers must always demonstrate the development of available knowledge to date. The second form of competency change is an increase in skills that have never been classified as teacher performance. Nowadays, it has become an important teacher competency. For example, digital literacy competencies were originally not among the instructors' competencies but are very much needed today. One interviewee said that some teachers were excellent in the school, however, some instructors had become outdated because they were unable to adapt to the technology that now dominated the teaching profession. This case is particularly evident among teachers who teach practical and technology subjects. The third characteristic of the change in teaching performance is disruptive competency. A clear example of this type of performance change is lecture-based learning, teaching technique. The lecture technique has ended completely. Regardless of the type of change in modern teaching competencies, teachers need to be able to adapt to these changes efficiently.

4.5.3 The new modern teaching competencies of the selected technological university

As a result of integrating the secondary data with the findings from the university administrators' perspective, the results of the competency model that answered the first research question were established into a new model of professional competency framework for the selected technological university instructor. Competencies include 12 domains as follows: core knowledge, curriculum and learning management, computing and ICT literacy, learning evaluation, learning psychology, international literacy, professional ethics, transformational leadership, instructors' social engagement, higher education legislation, learning attitude, and 21st century skills. It was also discovered that competency in leadership facilitates this new learning. It should be used as a model for further exploration of perceived importance levels and existing levels of performance.

4.5.4 The new paradigm of the instructor in terms of role, function, and responsibility

Modern teaching competencies discovered in this research have dramatically changed the roles and duties of teachers. The researcher has tried to distinguish the characteristics of the discovered performance requirements into two categories, the ability to add knowledge, and the ability to facilitate learning. The results show that there are four competing competencies required to have the ability to add knowledge, including core knowledge, curriculum and learning management, learning evaluation, and skills in the 21st century. On the other hand, the other eight competencies are competencies delivering the ability to facilitate the learning of learners: computing and ICT literacy, learning psychology, international literacy, professional ethics, transformational leadership, instructor's social engagement, higher education legislation, and learning attitude. The most important competency that is demonstrated as a means of encouraging learning is the competency to create a positive attitude toward learning. This research, therefore, answers the first research question integrating the characteristics of the new teaching competencies from the findings into the model of professional competency framework for facilitating student learning focusing on 12 domains. These competencies are no longer just teaching competencies. The most important thing is that these competencies should no longer be called teaching competencies, but should instead be called 'Competencies in facilitating student learning of the selected technological university instructors', which support the learning achievements of the learners.

5. CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

1) Addressing the first research question, about the expected competency in facilitating student learning, could be answered by an explanation of 12 competency domains with 41 sub-domains. The expected competency was established into a new model of Professional Competency Framework, according to the results of integrating the secondary data with the findings from the university administrators' perspective. This competencies framework includes 12 domains as follows: core knowledge, curriculum and learning management, computing and ICT literacy, learning evaluation, learning psychology, international literacy, professional ethics, transformational leadership, instructors' social engagement, higher education legislation, learning attitude, and 21st century skills.

2) Addressing the second research question about the existing competency.

The results of the survey and quantitative data analysis in terms of existing levels of competency, the level of competence of instructors at the selected technological university was high level, with a rating score average of 3.68- 5.00. The competency among the highest scores was the Professional Ethics domain, and in the lowest was the International Literacy domain. Therefore, if there are limitations in the resources for developing teachers' competencies, the administrator should first focus on development in the domain of international literacy. Then, seriously consider the details of the competency category to prioritize the determination of activities for further improvement and development.

3) Addressing the third research question on recognition of importance of competencies in facilitating student learning by the instructors in the technology

university involved recognition of importance levels. Respondents agreed that the performance of all 12 domains is of high importance, with an average score of 4.00 or higher on all questions. The results show that the findings of competencies that were developed from the executive's perspective and from examining documents were found to be extremely relevant to modern teaching competencies since all the respondents agreed that there was a level of 'highly important' for every question.

5.2 Recommendations for further human resource development activities.

Competencies as a facilitator in learning to enhance student achievement. In addition to being diverse and having different levels of understanding, it is also difficult to create a system for developing instructors' competencies. The selected technological university should have an organization that has responsibility for testing and qualification of instructors' competency. It should be a center for teaching and learning excellence that has a system for developing teachers' outstanding competencies in the profession under the development framework based on the competency framework from this study. However, the development of instructors' competencies in modern teaching is complex, requiring expert human resource development to install systems for the development of new instructors' competencies.

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