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### ASEAN TEACHERS' COMPETENCY MODEL DEVELOPMENT FOR RAJABHAT UNIVERSITY PRE-SERVICE TEACHER IN THAILAND

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#### **ABSTRACT**

Research objectives are 1) to explore ASEAN teachers' competency level in Rajabhat university Pre-service teacher and 2) to examine the validity of ASEAN teachers' competency model for Rajabhat university Pre-service teacher in Thailand. Research samplings are 480 Pre-service teacher who studied in 5<sup>th</sup> year of education faculty in Rajabhat university in 2019. They are selected by using Multi-stage random sampling. Research instrument is ASEAN teachers' competency questionnaire in 5 ratio scale. Data analyses are Frequency, Percentage, Average, Standard Deviation, and Confirmatory Factor Analysis.

It was found that the overall of ASEAN teachers' competency within Rajabhat university Pre-service teacher was high level (M = 4.12) The highest part was becoming a better teacher every day (M = 4.30) whereas helping students' learning (M = 4.13), knowing and understanding what to teach (M = 4.06), and engaging the community (M = 3.97) were in order.

ASEAN teachers' competency model for Rajabhat university Pre-service teacher was relevant to observed data. It is shown that Chi-Square = 33.71, df = 34, p = 0.48,  $\chi^2/df = 0.99$ , RMSE = 0.00, RMR = 0.01 GIF = 0.99, AGIF = 0.97. The standard weight factor was positive (0.77 – 0.90). Moreover, the statistical significance was .01.

#### **INTRODUCTION**

Rajabhat university is an institution in Thailand that takes an important role to produce and develop teachers. The important goal is proficiency teachers. It is

relevant to National Education Plan (2017 - 2036) and government policy. There are a lot of methods to produce good teachers. The beginning procedure is selecting students who have got teacher's qualifications and manners. Next procedure is getting the students to learn, expose, and develop themselves about curriculum development and competency instruction. The last step is exploring their experiences on teaching as professional teachers. It is according to the Ministry of Education announcement about standard qualification of the bachelor's degree of education in 2019. It is covered about integrated curriculum, performance curriculum, and study by themselves on performance. (the Ministry of Education, 2019: pp. 2 - 3).

In earlier period, the measurement of teachers' competency was one-dimension. It was the measurement of affective commitment. Later, the measurement of performance was developed. It was the multidimensional. There are many difference measurements of performance. They are the origins of ideas and instruments in nowadays. However, the diversities of performance measurements were affected 2 problems; no consensus of performance and no measurement reflecting the performance. Although the researchers interested teacher performances in multidimensional phenomenon, there has been a general failure to measure it in a multi-dimensional. (Tyree, 1996) Moreover, the scales would not be relevant indicator of professional commitment for every profession. (Blau, 2001)

ASEAN teachers' competency measurement dimensions were synthesized in order to create a conceptual framework of ASEAN teachers' competency measurement. ASEAN teacher organization defined Southeast Asia Teachers' Competency Framework (SEA-TCF). It is identified the ASEAN teachers' competencies in four dimensions: 1) Knowing and understanding what to teach, 2) Helping students' learning, 3) Engaging the community, 4) Becoming a better teacher every day. (The Teacher Council of Thailand, 2018: 7-16). It is as well as the consistence of McClelland (1973). He said that the six principles just enumerated for new testing movement may affect occupational testing in school: 1) The best testing is criterion sampling, 2) Test should be designed to reflect changes in what the individual has learned, 3) How to improve on the characteristic tested should be made public and explicit, and 4) Test should assess competencies involved in cluster of life outcomes; that included a) Communication skills b) Patience or response delay as psychologists c) Moderate goal setting, d) Ego development, 5) Test should involve operant as well as respondent behavior, and 6) Test should sample operant thought patterns to get maximum generalizability to various action outcomes. After studying ASEAN teachers' competency, what are the questions in ASEAN teachers' competency measurement questionnaire? That should be considered to obtain the accuracy and useful information.

From necessity and importance mentioned above, the researcher developed the measurement model of ASEAN teachers' competency for Rajabhat University Pre-service teacher. The ASEAN teachers' competency level was studied and the construct validity of ASEAN teachers' competency model for Pre-service teacher was examined. Confirmatory factor analysis was used to compare with

observed data. Research knowledge will be used as a guideline for developing ASEAN teachers' competency for Rajabhat University Pre-service teacher.

### **RESEARCH OBJECTIVES**

2.1 To explore ASEAN teacher performance level in Rajabhat university pre-service teachers.

2.2 To examine the reliability of ASEAN teacher's competence model for Rajabhat university pre-service teachers.

### **RESEARCH METHODOLOGY**

#### ***Populations and samplings***

3.1.1 Populations were Pre-service teacher who studied in education faculties of 38 Rajabhat Universities in 2019.

3.1.2 Samplings in qualitative experiment of ASEAN teachers' competency questionnaire were Pre-service teacher who studied in education faculties of Rajabhat Universities in 2019. Confirmatory Factor Analysis was used to analyze the content validity. The samplings criteria; 10 samplings a variable was defined. (Hair and others, 2006). In the research, there are 12 observed variables. The samplings are at least 400. Multi-stage random sampling was explored like this.

The 1<sup>st</sup> step was dividing Rajabhat universities into 4 groups as 4 regions. Then 2 universities each region were simple random sampling. There were 8 universities.

The 2<sup>nd</sup> step was 60 Pre-service teacher a university in the 1<sup>st</sup> step with simple random sampling. There are 480 Pre-service teacher.

#### ***Research Instrument***

Research instrument was ASEAN teachers' competency questionnaire. It is consisted of 4 factors; 1) Knowing and understanding what to teach, 2) Helping students' learning, 3) Engaging the community, 4) Becoming a better teacher every day.

#### ***Research Methodology and Implementation***

ASEAN teachers' competency measurement questionnaire was developed like this:

- 1) Define the research objective.
- 2) Explore the principles of measurement and the theories of ASEAN teachers' competency.
- 3) Clarify the observed variables definition of ASEAN teachers' competency.
- 4) Select the questionnaire model. The researcher considered and designed ASEAN teachers' competency questionnaire in 5 ratio scale according to Likert method; strongly agree (5), agree (4), neither agree or disagree (3), disagree (2), strongly disagree (1).
- 5) Note down the questions of ASEAN teachers' competency. The advisers considered the item objective congruence

(IOC) of ASEAN teachers' competency questionnaire. It is adjusted to the advisers' comments.

6) 5 experts reviewed the item objective congruence (IOC) of ASEAN teachers' competency questionnaire as well as the questionnaire language.

7) The results and the comments of the item objective congruence (IOC) of ASEAN teachers' competency questionnaire were examined. The IOC results of each items were between 0.67 – 1.00.

8) ASEAN teachers' competency questionnaire was assessed by 50 samplings. T-test statistic was used to determine the discrimination ( $r$ ) and a significant between the means of two groups; the high score group and the low score group. It was found that the statistical significance was .01. Furthermore, Cronbach's Alpha Coefficient was examined the validity ( $\alpha$ ). It was 0.985 as the table 1.

**Table 1** Cronbach's Alpha Coefficient of ASEAN teachers' competency questionnaire

ASEAN teachers' competency questionnaire	Cronbach's Alpha Coefficient
1. Knowing and understanding what to teach (KU)	0.919
2. Helping students' learning (HS)	0.969
3. Engaging the community (EC)	0.964
4. Becoming a better teacher every day (BT)	0.974
<b>Overall</b>	<b>0.985</b>

9) Select the quality items and manipulate the complete questionnaire.

10) the complete ASEAN teachers' competency questionnaire was scrutinized by 480 samplings. Confirmatory factor analysis (CFA) was used to clarify the content validity.

### ***Research Procedure***

Education faculty boards of 38 Rajabhat universities were requested to reply the questionnaires. The data were collected by 480 Pre-service teacher through google form.

### ***Research Analysis***

Research data were analyzed as;

3.5.1 Descriptive statistic were frequency, percentage, means, standard deviation, and correlation analysis.

3.5.2 Fundamental examination consensus

1) Random sampling was tested in normal distribution, skewness and kurtosis.

2) Variable correlation was explored to determine in Kaiser-Meyer-Olkin (KMO) test and Bartlett's test of sphericity. Suitable data and the proportion of variance were measured for factor analysis.

3) Kaiser-Meyer-Olkin (KMO) test was  $> 0.50$ . It was shown that data was suited for factor analysis.

4) Bartlett's test of sphericity was less than .05 of the significance levels to indicate that a factor analysis may be useful with data.

3.5.3 The fit index of ASEAN teachers' competency model related to observed data was considered in chi-square, Goodness of Fit Index (GFI), Adjust Goodness of Fit Index (AGFI) and Root Mean Square Error of Approximation (RMSEA).

3.5.4 Goodness of Fit Measures was studied whether the model was fit to observed data or not. It was considered as: (Jöreskog and Sörbom, 1996)

1) Chi-Square test indicates the difference between observed and expected covariance matrices. Values closer to zero indicate a better fit; smaller difference between expected and observed covariance matrices.

2) Goodness of Fit Index (GFI) is a measure of fit between the hypothesized model and the observed covariance matrix. The GFI range between 0 and 1, with a value of over. Values closer to 1 indicate a better fit, higher difference between expected and observed covariance matrices.

3) The adjusted goodness of fit index (AGFI) corrects the GFI, which is affected by the number of indicators of each latent variable. The AGFI range between 0 and 1, with a value of over. Values closer to 1 indicate a better fit, higher difference between expected and observed covariance matrices.

4) Root Mean Square Error of Approximation (RMSEA) avoids issues of sample size by analyzing the discrepancy between the hypothesized model, with optimally chosen parameter estimates, and the population covariance matrix. The RMSEA ranges from 0 to 1, with smaller values indicating better model fit. A value of .06 or less is indicative of acceptable model fit.

Goodness of Fit Measures was proved the hypothesis model of ASEAN teachers' competency questionnaire and observed data. It was shown in table 2 (Angsuchot, Suppamart & others, 1998: 22-25)

**Table 2** Goodness of Fit Measures Criteria

Index	Accepted Range
1. Chi-square ( $\chi^2$ )	$\chi^2 =$ No significance level Or P-value of higher 0.05
2. $\chi^2/df$	Less than 2
3. Goodness of Fit Index: GFI	Values closer to 1
4. Adjust Goodness of Fit Index: AGFI	Values closer to 1
5. Comparative Fit Index (CFI)	Values closer to 1
6. Tucker-Lewis Index (TLI)	Values closer to 1
7. Standardized Root Mean Square Residual: SRMSR	Values closer to 0
8. Root Mean Square Error of Approximation: RMSEA	Values closer to 0

3.5.5 Model adjustment was explored on theory and principle researches. Parameter estimation reason, squared multiple correlation, and overall fit were considered to observed data.

## RESEARCH FINDING

4.1 Pre-service teacher who answer the questionnaires are 296 females (61.67 %) and 184 males (38.33 %). 240 Pre-service teacher (50 %) study in social and science. They study in 8 Rajabhat University in 4 regions of Thailand. There are 60 Pre-service teacher (2.50 %) in each university. 262 Pre-service teacher (54.60 %) explore their teachings in secondary schools, as well as, 151 Pre-service teacher (31.50 %) take in their teaching experiences in primary schools. Moreover, 47 Pre-service teacher (9.80 %) practice their teachings in Provincial Organization Administration schools and 20 Pre-service teacher (4.20 %) encounter their teachings in private schools.

4.2 Pre-service teacher in Rajabhat university had got ASEAN teacher competency in high level every item (Mean = 3.92 – 4.26, SD. = 0.50 - 0.64). The kurtosis was |0.11| to |5.03| and the skewness was |0.15| to |2.39|. It was shown in table 3.

\*Skewness < |1| (Hair, & et al. 2010) \*\* Kurtosis < |7| (Curran, & et al. 1996)

**Table 3** Means, Standard Deviation, Skewness and Kurtosis of ASEAN Teachers' Competency Indicators

Observed variables	Mean	SD.	Skew	Kurt
<b>1. Knowing and understanding what to teach (KU)</b>				
1.1 Deepen and broaden my knowledge on what I teach. (KU1)	3.99	0.52	-0.42	-0.15
1.2 Understand education trends, policies and curricula. (KU2)	4.11	0.50	-1.36	-0.27
1.3 Keep myself updated on local, national, regional and global developments. (KU3)	4.09	0.53	-0.11	-1.00
<b>2. Helping students' learning (HS)</b>				
2.1 Know my students. (HS1)	4.12	0.55	-3.28	-2.39
2.2 Use the most effective teaching and learning strategy.(HS2)	4.15	0.53	-5.03	-1.24
2.3 Assess and give feedback on how my students learn. (HS3)	4.14	0.54	-3.37	-2.96
<b>3. Engaging the community (EC)</b>				
3.1 Partner with parents and caregivers. (EC1)	3.92	0.64	-2.50	-0.66
3.2 Involve the community to help my students' learning. (EC2)	3.99	0.64	-3.23	-1.17
3.3 Encourage respect and diversity. (EC3)	3.99	0.63	-2.45	-0.42
<b>4. Becoming a better teacher every day (BT)</b>				
4.1 Know myself and others. (BT1)	4.26	0.53	-3.45	-0.70
4.2 Practice human goodness in my life	4.32	0.52	-3.70	-1.10

and in my work. (BT2)				
4.3 Master my teaching practice. (BT3)	4.32	0.53	-3.68	-1.01
<b>Overall</b>				

4.3 Variables correlation was analyzed in Pearson's product moment correlation coefficient. There were 12 observed variables. It was found that there were 78 pairs of observed variables correlation. Every pairs were positive differential statistic significant at .01 level as well as the correlation was 0.31 – 0.77. (The correlation should not be more than 0.80) It was shown that there was no Multicollenariaty. It was represented that every observed variable was relationship and were shown in the same way. Bartlett's Test of Sphericity was examined the observed variables matrix. It was expressed Chi-Square = 5378.673, df = 66, p = .000 and was positive differential statistic significant at .01 level. Moreover, Kaiser-Meyer-Olkin (KMO) was 0.919 (more than 0.05). It was indicated that the observed variables matrix was not unique matrix, however, the observed variables were related. In the case of that, they should be analyzed in factor analysis. The relationship of observed variables in ASEAN teachers' competence could be shown as table 4.

**Table 4** The relationship of observed variables in the indicators of ASEAN teachers' competency model.

Vari able	Correlation											
	K U 1	K U 2	K U 3	HS 1	HS 2	H S 3	EC 1	EC 2	EC 3	BT 1	BT2	BT3
KU1	1											
KU2	0. 69 **	1										
KU3	0. 62 **	0.7 7* *	1									
HS1	0. 64 **	0.6 7* *	0.6 1* *	1								
HS2	0. 65 **	0.6 9* *	0.6 1* *	0.7 0* *	1							
HS3	0. 60 **	0.6 9* *	0.5 6* *	0.6 5* *	0.6 5* *	1						
EC1	0. 57 **	0.5 7* *	0.5 5* *	0.6 3* *	0.6 2* *	0. 6 3 *	1					
EC2	0. 57 **	0.5 8* *	0.5 4* *	0.6 4* *	0.6 4* *	0. 6 2	0.7 5* *	1				

						*						
						*						
EC3	0.55**	0.62*	0.31*	0.40*	0.63*	0.67*	0.60*	0.75*	1			
BT1	0.59**	0.63*	0.51*	0.55*	0.63*	0.70*	0.60*	0.60*	0.61*	1		
BT2	0.54**	0.60*	0.53*	0.53*	0.63*	0.67*	0.41*	0.53*	0.59*	0.64*	1	
BT3	0.55**	0.58*	0.59*	0.56*	0.58*	0.66*	0.47*	0.51*	0.54*	0.64*	0.61*	1
<b>KMO: Measure of Sampling Adequacy = 0.919</b> <b>Bartlett's Test of Sphericity: Chi-Square= 5378.673, df = 66, p = .000</b>												

\*p<0.01

4.4 Content validity of ASEAN teachers' competency model was revealed that Chi-Square = 33.71, df = 34 and p-value = .48. Chi-square ( $\chi^2$ ) was no differential statistic significant. Furthermore, RMSE = 0.00, RMR = 0.00 (near the zero) and GIF = 0.99, AGIF = 0.97 (near the 1 range), as well as  $\chi^2/df = 0.99$  (less than 3), they were shown that ASEAN teachers' competency model for Pre-service teacher had got the content validity. It was related to the observed data.

In addition, the standard weight factor efficiencies of the observed variables were differential statistic significant at .01 level. The highest standard weight factor was Encourage respect and diversity. ( $b_{sc} = 0.90$ ). The next standard weight factors were Master my teaching practice. ( $b_{sc} = 0.87$ ) Partner with parents and caregivers. ( $b_{sc} = 0.86$ ) Involve the community to help my students' learning. ( $b_{sc} = 0.86$ ) Understand education trends, policies and curricula. ( $b_{sc} = 0.844$ ) Assess and give feedback on how my students learn. ( $b_{sc} = 0.84$ ) Know myself and others. ( $b_{sc} = 0.83$ ) Know my students. ( $b_{sc} = 0.82$ ) Use the most effective teaching and learning strategy. ( $b_{sc} = 0.81$ ) Practice human goodness in my life and in my work. ( $b_{sc} = 0.80$ ) Deepen and broaden my knowledge on what I teach. ( $b_{sc} = 0.78$ ) and Keep myself updated on local, national, regional and global developments. ( $b_{sc} = 0.77$ ) in order. The observed variables validity was indicated that the covariance of ASEAN teachers' competence model for Rajabhat university Pre-service teacher was in average to high range ( $R^2 = .59$  to  $.91$ ). It was shown in table 5 and figure 1.

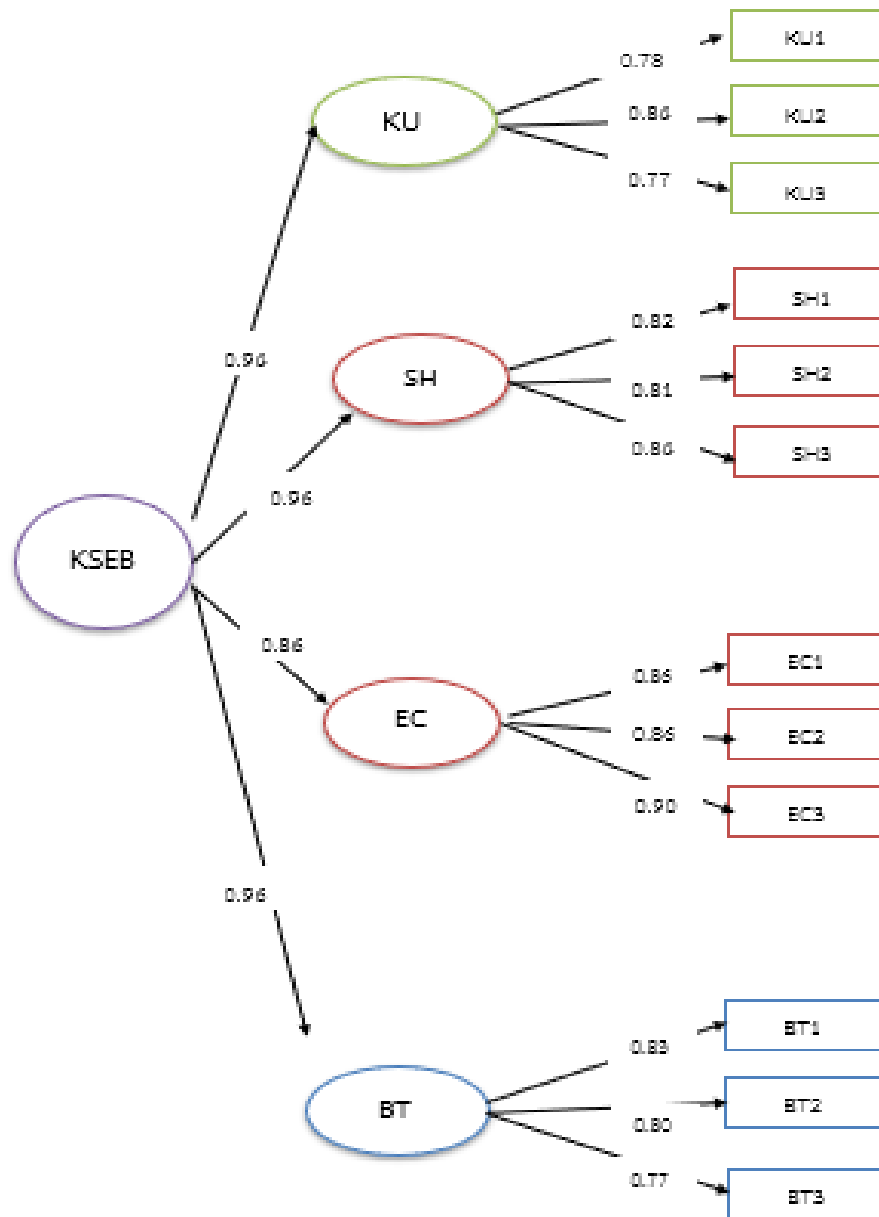


**Table 5** The 2<sup>nd</sup> confirmed factor analysis of ASEAN teachers' competence for Rajabhat university Pre-service teacher.

Observed Variables	Factors of ASEAN teachers' competence for Pre-service teacher			
	b <sub>sc</sub>	SE	T	Validity (R <sup>2</sup> )
<b>1<sup>st</sup></b>				
KU	0.94**	0.06	17.05	0.89
HS	0.96**	0.05	20.59	0.89
EC	0.86**	0.05	17.71	0.74
BT	0.96**	0.05	18.93	0.91
<b>2<sup>nd</sup></b>				
KU1	0.78**	<-->	<-->	0.60
KU2	0.84**	0.04	19.43	0.71
KU3	0.77**	0.05	16.13	0.59
HS1	0.82**	<-->	<-->	0.68
HS2	0.81**	0.04	19.41	0.65
HS3	0.84**	0.04	20.21	0.71
EC1	0.86**	<-->	<-->	0.75
EC2	0.86**	0.04	21.55	0.73
EC3	0.90**	0.05	19.26	0.79
BT1	0.83**	<-->	<-->	0.69
BT2	0.80**	0.04	18.64	0.63
BT3	0.87**	0.04	17.74	0.59
<b>Chi-Square =33.71, df = 34, p = 0.48, <math>\chi^2/df = 0.99</math>, RMSEF = 0.00, RMR = 0.01 GIF = 0.99, AGIF = 0.97</b>				

remarks : \*\*p<.01, b<sub>sc</sub> means Standard weight Factor  
<--> means Execution Parameter; No result report on SE and t

**Figure 1** Content validity of ASEAN teachers' competence for Rajabhat University Pre-service teacher and experimental data



Chi-Square =33.71, df = 34, p = 0.48,  $\chi^2/df = 0.99$ , RMSER = 0.00, RMR = 0.01

GIF = 0.99, AGIF = 0.97

**RESEARCH CONCLUSION**

5.1 Pre-service teacher in Rajabhat university had got the high level of ASEAN teachers' competence. The highest item was becoming a better teacher every day. It was shown that It is the most important variable in ASEAN teachers' competence. Knowing myself and others, practicing human goodness in my life and in my work as well as mastering my teaching practice were the fundamental characteristics of ASEAN teachers' competence.

Whereas engaging the community was represented in less level. Owing to Pre-service teacher' experiences in schools, they lacked their opportunities to be concerned about the villagers and community activities.

5.2 Content Validity of ASEAN teachers' competency model for Rajabhat university Pre-service teacher was relevant to observed data. It is shown that the standard weight factors = 0.77 – 0.90, chi-square = 33.71, df = 34 and p-value = .48. Moreover, chi-square was different from zero with no statistical significant. RMSE = 0.00 and RMR = 0.01 were a linear relationship in a coefficient of 0; on the other hand, GIF = 0.99, AGIF = 0.97 were a linear relationship in a coefficient of 1.  $\chi^2/df = 0.99$  was less than 3. The coefficient of all standard weight observed factors was with statistical significance at .01. It is according to the criteria of structural equation modeling (Joreskog, K. G., & Sorbom, D., 1996). It is represented ASEAN teachers' competence model for Rajabhat University Pre-service teacher in Thailand was consisted of structural validity as experimental data.

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