

An Evaluation of Items and Dimensional Structure of a Scale to Measure Teachers' Professional Commitment in Thailand

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Abstract

The purpose of this study was to examine the items and the dimensionality of a scale to measure professional commitment of teachers in Thailand. Data were collected by in-depth interview and questionnaire. The content analysis was conducted with the qualitative data for the purpose of item writing. Differential item functioning (DIF), exploratory factor analysis (EFA), confirmatory factor analysis (CFA), and bi-factor CFA model analysis were conducted to establish validity evidence. As a result of EFA and CFA, the study showed that a 3-dimensional scale can effectively measure professional commitment of teachers, which was achieved by the 18-item measure. A polytomous item response theory model was also fitted to estimate item parameters and to examine the test information function.

Keywords: professional commitment, scale items, factor structure

1. Introduction

Measuring professional commitment is important for many reasons. For example, it is believed that the level of professional commitment affects work performance (Aryee & Tan, 1992; Lee et al., 2000; Somech & Bogler, 2002), intention to leave or stay in the profession (Aryee & Tan, 1992; Kassen & Chiu 2011; Wang et al., 2012), skill development (Aryee & Tan, 1992), and organizational citizenship behavior (Somech & Bogler, 2002).

The construct of professional commitment has been defined based on several different focuses, including attitude, behavior, motivation, and psychological states. For example, some authors focused on attitude to define professional commitment (Blau, 1988, 1989; Lee et al., 2000; Morrow, 1993; Morrow & Wirth, 1989; Vendenberg & Scarpello, 1994; Wallace, 1993, 1995), while some other authors focused on behavior (Benkhoff, 1997; Price & Mueller, 1981; Welsch & LaVan, 1981). Also, some others focused on both attitude and behavior (Aranya & Ferris, 1984; Aranya, Kushnir, & Valency, 1986; Aranya, Pollock, & Amemic, 1981). On the other hand, London (1983), Noe et al. (1990), and Grzeda and Prince (1997) focused on motivation, while Bagraim (2003), Irving et al., (1997), Meyer et al., (1993), Meyer and Herscovitch (2001) focused on psychological states.

In addition, some authors concluded the construct can be measured by a unidimensional scale, while others claim multidimensional scale is necessary to measure the construct. Researchers who treated commitment as a unidimensional construct focused on attitude (Blau, 1988) or behavior (Benkhoff, 1997) aspects of professional commitment. When both attitude and behavior were considered, professional commitment was typically defined as a two-dimensional construct (Aranya et al., 1981). Some researchers defined professional commitment as a three dimensional construct. For example, Meyer et al. (1993) defined professional commitment with affective, normative, and continuance factors. On the other hand, London (1983) defined the construct by identity, insights, and resilience. Furthermore, some researchers defined the construct by four factors (affective, normative, accumulated cost, and limited alternative factors) (Blau, 2003, 2008).

When professional commitment scales are developed, some scales are intended to be used for a specific occupation, whereas others are intended to be used for any occupations. For example, Meyer and Herscovitch (2001) believed that their three-dimensional commitment scale could be used for any occupations. Although the three-dimensional commitment scale (Meyer et al., 1993; Meyer & Herscovitch, 2001) is popular among

practitioners, some researchers have pointed out that the scale may not be applicable regardless of occupations (Culpepper, 2000; Blau, 2001, 2008; Bergman, 2006; Jaros, 2007; Xu & Bassham, 2010). On the other hand, some others developed professional commitment scales with an intention to be used for specific occupations (Blau, 1988; Morrow & Wirth, 1989; Grzeda & Prince, 1997; Bagraim, 2003).

In summary, commitment has been defined and measured in many different ways, and there is a lack of consensus in the definition of the construct. As a result, the number of items and dimensional structures of the construct have been derived differently depending on how the construct is defined and who developed a scale. Thus, some parts of the existing scales of commitment scales are quite different from each other, while there are some overlaps. This weakness of measuring professional commitment may diminish validity, and a scale would be weakly related to the construct, depending on how the definition of the construct matches user's intention to measure the construct (Jaros, 2007; Blau, 2008, Xu & Bassham, 2010).

The purpose of this study was to develop and investigate the scale items and the factor structure of professional commitment specifically for teachers in Thailand. Teacher commitment has been suggested as one critical element to the success of school education. It is associated with teachers' work performance, absenteeism, turnover, and attitude toward school, as well as students' academic achievement (Crosswell & Elliott, 2004; Firestone, & Pennell, 1993; Park, 2005). Data were analyzed both qualitatively and quantitatively to develop a scale for measuring professional commitment of teachers.

2. Method

All data collections were done in Thai language, including interviews, item development process, and the measurement instruments. The procedures, measures, and results reported in this paper are translations of them into English.

2.1 Participants and Measures

The participants in this study were teachers in Thailand. This study was consisted of two phases. In Phase I, in-depth interviews were conducted with 23 teachers for the purpose of analyzing the concept of professional commitment perceived by teachers. As a result, 19 questionnaire items were developed. In Phase II, a total of 600 teachers were sampled, and responses from a total of 471 teachers to the questionnaire were analyzed for the purpose of refinement and validation of the scale. Data were collected in two separate steps in Phase 2. In the first step in Phase 2, the 19-item questionnaire developed in the Phase 1 was distributed to a total of 300 teachers, and 269 were returned completed, representing an acceptable response rate of 89.69%. The demographics of the sample were as follows. Public school 50.6% and private school 49.4%, education major in college 61.7% and other major 23.4%, and teaching same subject area as college major 74.3% and not teaching same subject area as college major 9.3%.

In the second step of Phase 2, two questionnaires were distributed to a total of 300 teachers. The first questionnaire was the one developed in Phase 1, but one item was removed from the questionnaire based on the analysis in the first step of Phase 2, accordingly, 18-item questionnaire. The second questionnaire was an 18-item questionnaire developed by Meyer et al. (1993), which intends to measure organizational commitment. This questionnaire was translated in Thai language for the purpose of this study. Originally, Meyer et al. used 7-point scale for their items. However, 5-point Likert-type scale was adopted to the items for this study, running from 1 (strongly disagree) to 5 (strongly agree). Among 300 participants, 202 (67.33%) were returned. The demographics of the sample were as follows. Public school 65.8% and private school 34.2%, education major in college 62.7% and other major 22.3%, and teaching same subject area as college major 73.3% and not teaching same subject area as college major 15.8%.

2.2 Procedures

In-depth interview was conducted in Phase 1. The interview was structured with a set of same questions to all teachers, which took approximately 30 minutes for each teacher. The interview questions were as follows. (1) Why did you choose to become a teacher? What motivated you to become a teacher? (2) Describe what you think about a teacher as a profession? (3) Describe what you think about your responsibility as a teacher? (4) Describe what you think about your teacher colleagues? (5) Describe what you think about your organization? (5) Have you ever attended professional development seminars for teachers? If so, what were they? (6) What is your ultimate goal in this career? (7) If you were offered another job with higher salary and better benefits, would you keep your career as a teacher? (8) Describe what you think important qualifications to become a teacher?

MAXQDA software program was used to analyze the data qualitatively. The data from the interview was used to develop questionnaire items. In Phase 2, SPSS and Mplus software program were used to analyze the data

quantitatively. In Step 1 of Phase 2, item-total correlations were examined for 19-items. At this point, one item was removed from the questionnaire due to its near-zero item-total correlation. Then, differential item functioning (DIF) analyses were conducted based on confirmatory factor analysis (CFA) with covariate modeling to compare the conditional item performance difference for each of three DIF factors (*type*=public vs. private schools, *major*=education major in college vs. other majors, and *experience*=teaching same subject area as college major vs. not). Also, exploratory factor analysis (EFA) was conducted to investigate the dimensionality of the 18-item questionnaire. In Step 2 of Phase 2, a series of CFA was conducted to cross-validate the factor structure identified in the previous step. Furthermore, a bi-factor CFA model analysis was conducted to compare the 18-item questionnaire developed in this study to the organizational commitment scale developed by Meyer et al. (1993). For model comparison purposes for these analyses, Chi-square (χ^2) statistic, root mean square error of approximation (RMSEA), comparative fit index (CFI), and standardized root mean square residual (SRMR) were used as model fit indices. Lastly, Graded response model (GRM) was fitted to a combined sample from Step 1 and Step 2 of Phase 2 to estimate item parameters for the 18 items. Test information function was also examined.

3. Results

In this study, six key words (sub-concepts) were selected for the construct of teachers' professional commitment based on experts' judgment by utilizing the transcribed interviews. The group of experts consisted of the first author of this paper and four experienced teachers. The selected keywords were (a) *value*, (b) *dignity*, (c) *responsibility*, (d) *willingness*, (e) *benefit* and (f) *alternative*. The group of experts agreed that these six keywords sufficiently cover the construct of professional commitment of teachers. Then, the analysis using code matrix browser was adopted using MAXQDA software, in order to verify the six selected keywords appeared sufficiently in the interview data. A code matrix browser analysis involves coding and categorizing the data, with systematic searches to find usages of given keywords. As a result, the frequencies of the keywords were; *responsibility* 45 (25%), *value* 41 (22.78%), *dignity* 29 (16.11%), *alternative* 27 (15.00%), *benefit* 20 (11.11%), and *willingness* 18 (10.00%). Furthermore, all six keywords were mentioned by a majority of teachers (see Table 1). Also, a majority of teachers mentioned 5 or 6 keywords. Only 7 teachers mentioned 3 or 4 keywords (See Table 2). These results confirmed that the six selected keywords were sufficiently and frequently mentioned in the interviews, and the group of experts agreed to retain all six keywords to write questionnaire items.

Table 1. The number of teachers who mentioned each of the six keywords in their interviews

Keywords	value	dignity	responsibility	willingness	benefit	alternative
# of teachers	22 (91.7%)	20 (83.3%)	21 (87.5%)	18 (75.0%)	15 (62.5%)	21 (87.5%)

Table 2. The number of keywords mentioned by teachers in their interviews

# of Keywords	# of teachers
6	5 (20.8%)
5	12 (50.0%)
4	6 (25.0%)
3	1 (4.2%)

Next, the group of experts worked on operational definitions of the six keywords. The operational definitions were input to MAXQDA software, and the software extracted a collection of sentences from the interview data that used either the target keyword or the definition of the keyword. Then, the experts examined the list for each keyword to further elaborate and/or refine the operational definition. Based on the finalized operational definitions of the six keywords, the experts wrote questionnaire items. It was determined that 3 items per keyword would sufficiently cover the sub-construct, except one keyword *alternative* for which 4 items were written. As a result, a total of 19 questionnaire items were developed.

For example, the operational definition of *responsibility* was determined by the experts to be *Working hard and taking responsibility in teaching. Being aware of students' achievement and teachers' ethics*. This keyword was mentioned by 3 teachers among 21 teachers in their interviews. They provided comments as follows.

- *I don't expect to work on my promotion. I would prefer to work for my students.*

- *I feel I give good knowledge to my students. I want them to be a good person.*
- *My career goal is for my students.*

Then, based on the operational definition and the extracted interview data, the experts developed an item phrased *I have worked very hard to help my students to be successful* (item 8).

In Step 1 of Phase 2 of this study, item-total correlations were first computed for the 19-item scale with item response data collected from 269 teachers. As a result, it was revealed that one item showed very low item-total correlation (0.059). It was the item *"I already had a career choice as a teacher in my mind when I was in college"*, which was related to keyword *alternative*. Therefore, this item was dropped from the scale, and remaining 18 items were used in the subsequent analyses of this study. Item-total correlations for the retained 18 items are summarized in Table 3. A list of translated 18 items is presented later in Table 4 along with the results of exploratory factor analysis. The actual 18 items in Thai language are presented in Appendix.

Table 3. Corrected item-total correlations for 18 retained items

Items																	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
.73	.71	.68	.70	.65	.68	.69	.71	.68	.64	.59	.62	.60	.63	.58	.65	.59	.62

Table 4. Standardized factor loadings for the 18 items for 3-factor EFA model

Items	Rotated factor loadings		
	1	2	3
Item1 I believe teacher profession is very important for human development.	.739	.216	.340
Item2 I believe and respect in profession as a teacher.	.745	.224	.296
Item3 I believe the society respect the teacher profession.	.794	.179	.254
Item4 I feel the teacher profession is a part of my life.	.741	.213	.315
Item5 I am proud to be a teacher.	.708	.319	.188
Item6 I am happy to be a teacher.	.551	.541	.166
Item7 I have used the highest ability to work in my profession as a teacher.	.470	.480	.340
Item8 I have worked very hard to help my students to be successful.	.438	.637	.235
Item9 I am aware of teacher's ethic.	.425	.576	.261
Item10 I have attended the teacher profession-related activities such as training courses or seminars.	.353	.674	.195
Item11 I have developed myself by reading books, journals, and doing the classroom research.	.096	.776	.273
Item12 I sacrifice my personal time to improve my teaching.	.178	.672	.340
Item13 I think I have career path in this profession.	.243	.262	.632
Item14 I think I am secured in this profession.	.219	.305	.654
Item15 I think teacher profession provides sufficient income and the welfare in the future.	.120	.440	.539
Item16 I think the teacher profession fits me the most.	.332	.169	.721
Item17 I have no choice. That is why I am a teacher.	.261	.183	.692
Item18 I think I still choose to be a teacher even though there are many other profession.	.271	.219	.701
Eigenvalue	8.937	1.233	1.062
Percentage of total variance	23.434	19.494	19.470
Cumulative percentage variance	23.434	42.928	62.398
Cronbach's α	.901	.870	.844

Next, Differential Item Functioning (DIF) was examined for three demographic variables (*type*=public vs. private schools, *major*=education major in college vs. other majors, and *experience*=teaching same subject area

as college major vs. not) by CFA with covariate modeling. The results revealed that statistically significant DIF was displayed for one item for each DIF factor. They were Item 2 for *experience* (= 5.993), Item 7 for *major* (= 5.407), and Item 11 for *type* (= 3.495). The estimated mean item performance differences between groups were 0.129, 0.246, and 0.104 for Items 2, 7, and 11, respectively. These values are in the scale of 5-point scale and not large enough to affect observed total scale scores by more than 1 point on average. Also, the group of experts examined these items and reached a conclusion that they cannot come up with any obvious reason to explain the observed conditional mean item-score differences. Therefore, the experts made a decision to retain these items, and the original content coverage of the construct was maintained.

Next, exploratory factor analysis (EFA) models were tested. The three-factor solution was supported by the Keiser criterion, as well as by the theory. Although the four-factor solution was supported theoretically, it was not supported by the Keiser criterion. Also, the three factor solution would combine the 6 items from keywords *benefit* and *alternative*, which could be interpreted as one common sub-construct *economy* aspect of professional commitment. In addition, the three-factor solution would evenly place 6 items per factor, which would be practically convenient. Therefore, among solutions with different numbers of factors, we determined that the 18 items in the scale yielded a three-factor solution the best.

Table 5. Comparisons for four confirmatory factor analysis models

Model		df		CFI	RMSEA	SRMR
one-factor	635.410	135		.779	.135	.074
two-factor	540.036	134	95.374***	.821	.122	.064
three-factor	353.732	132	186.304***	.902	.091	.062
four-factor	339.539	129	14.193***	.907	.090	.062

Note. = change chi-square relative to chi-square for the preceding model; CFI=Comparative Fit Index; RSMEA= Root Mean Square Error of Approximation; SRMR= Standardized Root Mean Square Residual; *** $p < 0.001$

Table 6. Standardized factor loadings for three-factor CFA model

Items	Factor 1	Factor 2	Factor 3
1	.849		
2	.871		
3	.899		
4	.732		
5	.645		
6	.730		
7		.810	
8		.743	
9		.853	
10		.837	
11		.834	
12		.526	
13			.652
14			.680
15			.589
16			.693
17			.610
18			.726

Note. Factor 1=Emotion, Factor 2=Obligation, Factor 3=Economy

The varimax rotation was used, and the three factors accounted for 62.398 % of the total variance, 23.434% by factor 1, 19.494% by factor 2, and 19.470% by factor 3. The factor loadings ranged from 0.480 to 0.794. The

results are shown in Table 4, and the highest factor loading for each item is bolded. We considered that each factor is consisted of items with bolded factor loading values. As a result, the result revealed that each factor is consisted of 6 items associated with 2 keywords. Factor 1 was consisted of items 1 to 6 (keywords *value* and *dignity*), Factor 2 was consisted of items 7 to 12 (keywords *responsibility* and *willingness*), and Factor 3 was consisted of items 13 to 18 (keywords *benefit* and *alternative*). Also, our results displayed similar three components to ones Meyer and Herscovitch (2001) and Blau (2001) defined. Factor 1 is similar to their emotional/affective factor, Factor 2 is similar to their obligational/normative, and Factor 3 is similar to their economy/continuance factor. Also, we computed Cronbach's for each factor, and they demonstrated sufficiently high values (.901, .870, and .844 for Factors 1, 2, and 3, respectively).

Next, we conducted a series of CFA with the Step 2 sample of 202 teachers. We fitted a single-factor, two-factor, three-factor, and four-factor models. The single-factor model was supported by Blau (1988, 1989), Morrow (1993), Morrow and Wirth (1989), and Wallace (1993). The two-factor model combined 6 items from *benefit* and *alternative* keywords into one common factor and 12 items from *value*, *dignity*, and *responsibility* and *willingness* keywords. The two-factor model is supported by Bergman (2006) and Meyer et al., (2002). The three-factor model combined 6 items from *value* and *dignity*, 6 items from *responsibility* and *willingness* keywords, and 6 items from *benefit* and *alternative* keywords, as supported by our Step 1 EFA results, as well as Irving et al. (1997), Meyer et al. (1993), Snape and Redman (2003), Bagraim (2003), and Xu and Bassham (2010). The four-factor model 6 items from *value* and *dignity*, 6 items from *responsibility* and *willingness* keywords, but 3 items from *benefit* keyword and 3 items from *alternative* keyword, as supported by Carson, Carson, and Bedeian (1995), as well as by Blau (2003, 2008).

Results are summarized in Table 5. It was revealed that models with more factors fit the data better. The four-factor model was statistically better than a three-factor model by the Chi-square difference test. However, their fit index values (CFI, RMSEA, and SRMR) were nearly identical. In addition, the correlation between factors 3 and 4 (i.e., *benefit* and *alternative* keywords) in the four-factor model was 0.831, indicating that the two factors were potentially measuring very similar or the same sub-construct. Thus, we concluded that the three-factor model would be the final model. Results for the three-factor model are summarized in Table 6.

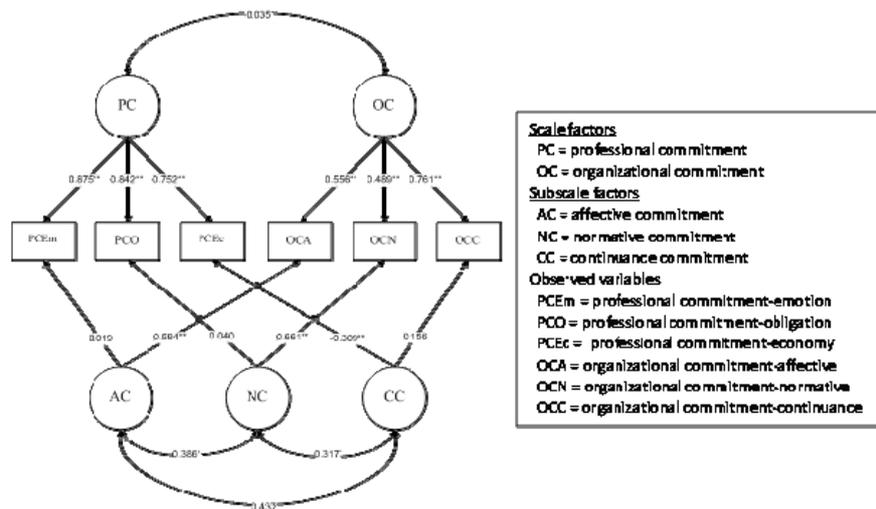


Figure 1. Results from bi-factor CFA model analysis

Note. R-squares: PCEm=0.766, PCO=0.711, PCEc=0.660, OCA = 0.662, OCN=0.676, OCC=0.604

Next, a bi-factor CFA model analysis was conducted to compare the three-factor structure derived in this study and the three-factor structure derived by Meyer et al. (1993). Recall that the Step 2 sample ($n = 202$) responded to the 18-item scale from this study, as well as the 18-item scale derived by Meyer et al. First, 6 observed variables were derived. Three variables (a) professional commitment - emotion (PCEm), (b) professional commitment - obligation (PCO), and (c) professional commitment - economy (PCEc) were total scores for 6 items for each of the 3 factors (i.e., subscales) derived in this study. The other three variables were derived from Meyer et al.'s subscales, (d) organizational commitment - affective (OCA), (e) organizational commitment - normative (OCN), and (f) organizational commitment - continuance (OCC), where each variable was a total

score for 6 items for each one of the 3 subscales. Second, a bi-factor model was set up such that each one of the six observed variables was predicted by two latent factors. One latent factor was defined based on which scale the observed variable came from (either this study or Meyer et al.). The other factor was defined based on what sub-scale the observed variable measures. We considered that PCEm and OCA were measuring a similar sub-scale. Similarly, we considered that PCO and OCN, as well as PCEc and OCC, were measuring a similar sub-scale.

The analyzed bi-factor model is depicted in Figure 1 along with the results. The result showed that the factor loadings for the factors that represented scales for this study and Meyer et al. (1993) were reasonably high, indicating the subscales well represented the target constructs by this study, as well as by Meyer et al. Also, the factors that represented subscales had reasonable magnitudes of correlations. However, the factor loadings for the three sub-scale factors were not consistent between the two scales. In addition, the correlation between the two scale factors were near zero ($r = -0.035$). These results potentially indicate that the two constructs measured by the two scales are not likely the same. This is probably due to the fact this study focused on professional commitment, while Meyer et al. focused on organizational commitment. Also, Meyer et al.'s scale was developed for use with any profession, whereas the scale in this study was constructed specifically for use with teachers.

Lastly, Graded response model (GRM) was fitted to estimate item parameters with a combined sample of $n = 471$ from Steps 1 & 2 in Phase 2. First, we examined two models; the reduced GRM with common slope for all items and the fully specified GRM with unique slope for each item. The model estimation of the reduced GRM resulted in a -2LL value of 1949.974 whereas a fully specified GRM yielded a value of 2123.413. The difference in these two values (173.439) is distributed as chi-square with 17 degrees of freedom with $p < .0001$. Therefore, we chose the model with unique slopes for 18 items for this study.

Estimated item parameters based on the GRM are reported in Table 4. The slope parameter (β) had values ranging from 1.420 to 2.827. The highest slope was for item 2 "*I believe and respect in profession as a teacher*", indicating that this item highly discriminated teachers with high commitment and teachers with low commitment. Furthermore, test information function showed that the 18-item scale can measure the construct for the standardized theta range from -2.91 to 2.16 with reasonable amount of the information 4.94 or higher. This information value is equivalent to the reliability of 0.80 or higher, indicating that a wide range of the trait levels can be measured with reasonably high reliability by this 18-item scale.

4. Conclusion

In this study, we demonstrated item development through a combination of qualitative data analyses and scale refinement through quantitative data analyses to measure professional commitment of teachers in Thailand. Overall, the 18-item scale developed in this study seems to function properly to measure the target construct. We also believe the 18-item scale has potential utilities and impacts. For example, this scale can be used to measure teacher professional commitment for prospectus teachers, as well as beginning in-service teachers, to become aware of their own professional commitment levels to ultimately be successful in their career.

Both literature and results from this study indicated that both professional commitment and organizational commitment are well represented by three factors (e.g., affective commitment, normative commitment, and continuance commitment). However, our bi-factor CFA results indicated that the factor loadings for the three sub-scale factors were not consistent between the scale to measure organizational commitment and the one to measure professional measurement, as well as near-zero correlation between the two commitment factors. These results indicate that the construct of commitment may have two distinctive interpretations, and the two constructs (professional commitment and organizational commitment) were not likely the same. Nonetheless, we found that 6 items developed in this study (Items 4, 5, 6, 16, 17, and 18) were very similar to some of the items developed by Meyer et al. (1993) and Blau (2003). It is an indication that there may be one or more sub-construct that is common to organizational commitment and professional commitment. We believe further study is needed to clarify this speculation. Also, Meyer et al.'s scale to measure organizational commitment was developed for use for any professions, whereas the scale in this study was constructed specifically for use with teachers. Since it is not clear whether this difference resulted in a dominant effect on the results, we also urge a future study to clarify this matter.

Limitations of this study include that it was not based on a large sample. For example, the Phase 1 of this study may have been biased due to the limited number of teachers whom the qualitative data were collected from. Also, the level of professional commitment is likely correlated with the year of experience. Although it is not a known limitation at this point, the factor structure may be different depending on years of experience. It will be an

interesting study to investigate in the future. Also, the scale was developed in Thailand context with Thai language. The scale should be validated in different language and in different cultural contexts.

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References

- Aranya, N., & Ferris, K. R. (1984). A reexamination of accountants' organizational-profession conflict. *The Accounting Review*, 59, 1-14.
- Aranya, N., Kushnir, T., & Valency, A. (1986). Organizational commitment in a male-dominated profession. *Human Relations*, 39, 433-448. <http://dx.doi.org/10.1177/001872678603900504>
- Aranya, N., Pollock, J., & Amemic, J. (1981). An examination of professional commitment in public accounting. *Accounting Organizations and Society*, 6, 271-280. [http://dx.doi.org/10.1016/0361-3682\(81\)90007-6](http://dx.doi.org/10.1016/0361-3682(81)90007-6)
- Aryee, S., & Tan, K. (1992). Antecedents and outcomes of career commitment. *Journal of Vocational Behavior*, 40, 288-305. [http://dx.doi.org/10.1016/0001-8791\(92\)90052-2](http://dx.doi.org/10.1016/0001-8791(92)90052-2)
- Bagrami, J. J. (2003). The dimensionality of professional commitment. *Journal of Industrial Psychology*, 29, 6-9. <http://dx.doi.org/10.4102/sajip.v29i2.104>
- Benkhoff, B. (1997). Disentangling Organizational Commitment: The Dangers of the OCQ for Research and Policy. *Personnel Review*, 26, 114-131. <http://dx.doi.org/10.1108/00483489710157823>
- Bergman, M. E. (2006). The relationship between affective and normative commitment: review and research agenda. *Journal of Organizational Behavior*, 27, 645-663. <http://dx.doi.org/10.1002/job.372>
- Blau, G. (1988). Further Exploring the meaning and management of career commitment. *Journal of Vocational Behavior*, 32, 284-297. [http://dx.doi.org/10.1016/0001-8791\(88\)90020-6](http://dx.doi.org/10.1016/0001-8791(88)90020-6)
- Blau, G. (1989). Testing the generalizability of a career commitment measure and its impact on employee turnover. *Journal of Vocational Behavior*, 35, 88-103. [http://dx.doi.org/10.1016/0001-8791\(89\)90050-X](http://dx.doi.org/10.1016/0001-8791(89)90050-X)
- Blau, G. (2001). On assessing the construct validity of two multidimensional constructs: occupational commitment and occupational entrenchment. *Human Resource Management Review*, 11, 279-298. [http://dx.doi.org/10.1016/S1053-4822\(00\)00052-8](http://dx.doi.org/10.1016/S1053-4822(00)00052-8)
- Blau, G. (2003). Testing a four-dimensional structure of occupational commitment. *Journal of Occupational and Organizational Psychology*, 76, 469-488. <http://dx.doi.org/10.1348/096317903322591596>
- Blau, G. (2008). Can a four-dimensional model of occupational commitment help to explain intent to leave one's occupation? *Career Development International*, 14, 116-132. <http://dx.doi.org/10.1108/13620430910950737>
- Carson, K., Carson, P., & Bedeian, A. (1995). Development and construct validation of a career entrenchment measure. *Journal of Occupational and Organizational Psychology*, 68, 301-320. <http://dx.doi.org/10.1111/j.2044-8325.1995.tb00589.x>
- Crosswell, L. J., & Elliott, R. G. (2004). *Committed teachers, passionate teachers: The dimension of passion associated with teacher commitment and engagement*. Paper presented at International Conference on Australian Association for Research in Education (AARE). 28th November - 2nd December Melbourne Australia. Retrieved from <http://eprints.qut.edu.au/968>
- Culpepper, R. A. (2000). A test of revised scales for the Meyer and Allen (1991). Three-component commitment construct. *Educational and psychological measurement*, 60, 604-616. <http://dx.doi.org/10.1177/00131640021970754>
- Firestone, W. A., & Pennell, J. R. (1993). Teacher commitment working conditions and differential incentive policies. *Review of Educational Research*, 63, 489-525. <http://dx.doi.org/10.3102/00346543063004489>
- Grzeda, M. M., & Prince, J. B. (1997). Career Motivation Measure: A Test of Convergent and Discriminant Validity. *International Journal of Human Resource Management*, 8, 172-196. <http://dx.doi.org/10.1080/09585199700000047>

- Irving, P. G., Coleman, D. F., & Cooper, C. L. (1997). Further assessment of a three-component model of occupational commitment: generalizability and differences across occupations. *Journal of Applied Psychology, 82*, 444-452. <http://dx.doi.org/10.1037/0021-9010.82.3.444>
- Jaros, S. (2007). Meyer and Allen Model of organizational commitment: measurement issues. *The Icfal journal of Organizational Behavior, 4*, 7-25.
- Klassen, R. M., & Chiu, M. M. (2011). The occupational commitment and intention to quit of practicing and pre-service teachers: Influence of self-efficacy job stress and teaching context. *Contemporary Educational Psychology, 36*, 114-129. <http://dx.doi.org/10.1016/j.cedpsych.2011.01.002>
- Lee, K., Carswell, J. J., & Allen, N. J. (2000). A meta-analytic review of occupational commitment: Relations with person and work related variables. *Journal of Applied Psychology, 85*, 799-811. <http://dx.doi.org/10.1037/0021-9010.85.5.799>
- London, M. (1983). Toward a theories of Career Motivation. *The Academy of Management Review, 8*, 620-630.
- Meyer, J. P., & Herscovitch, L. (2001). Commitment in the workplace: Toward a general model. *Human Resource Management Review, 11*, 61-89. [http://dx.doi.org/10.1016/S1053-4822\(00\)00053-X](http://dx.doi.org/10.1016/S1053-4822(00)00053-X)
- Meyer, J. P., Allen, N. J., & Smith, C. A. (1993). Commitment to organizations and occupations: Extension and test of a three-component conceptualization. *Journal of Applied Psychology, 78*, 538-551. <http://dx.doi.org/10.1037/0021-9010.78.4.538>
- Meyer, J. P., Stanley, D. J., Herscovitch, H., & Topolynsky, L. (2002). Affective continuance and normative commitment to the organization: A meta-analysis of antecedents' correlates and consequences. *Journal of Vocational Behavior, 61*, 20-25. <http://dx.doi.org/10.1006/jvbe.2001.1842>
- Morrow, P. C. (1993). *The theory and measurement of work commitment*. Greenwich: JAI Press.
- Morrow, P. C., & Wirth, R. E. (1989). Work commitment among salaried professionals. *Journal of Vocational Behavior, 34*, 40-56. [http://dx.doi.org/10.1016/0001-8791\(89\)90063-8](http://dx.doi.org/10.1016/0001-8791(89)90063-8)
- Noe, R. A., Noe, A. W., & Bachhuber, J. A. (1990). An investigation of the correlates of career motivation. *Journal of Vocational Behavior, 37*, 340-356. [http://dx.doi.org/10.1016/0001-8791\(90\)90049-8](http://dx.doi.org/10.1016/0001-8791(90)90049-8)
- Park, I. (2005). Teacher commitment and its effects on student achievement in American high schools. *Educational Research and evaluation, 11*, 461-485. <http://dx.doi.org/10.1080/13803610500146269>
- Price, J., & Mueller, C. (1981). A causal model of turnover for nurses. *Academy of Management Journal, 24*, 543-565. <http://dx.doi.org/10.2307/255574>
- Snape, E., & Redman, T. (2003). An evaluation of a three-component model of occupational commitment: Dimensionality and consequences among United Kingdom human resource management specialist. *Journal of Applied Psychology, 88*, 152-159. <http://dx.doi.org/10.1037/0021-9010.88.1.152>
- Somech, A., & Bogler, R. (2002). Antecedents and consequences of teacher organizational and professional commitment. *Educational Administration Quarterly, 28*, 555-577. <http://dx.doi.org/10.1177/001316102237672>
- Vandenberg, R. J., & Scarpello, V. (1994). A longitudinal assessment of the determinant relationship between employee commitment to the occupation and the organization. *Journal of Organizational Behavior, 15*, 535-547. <http://dx.doi.org/10.1002/job.4030150605>
- Wallace, J. E. (1993). Professional and organizational commitment: compatible or incompatible? *Journal of Vocational Behavior, 42*, 333-349. <http://dx.doi.org/10.1006/jvbe.1993.1023>
- Wallace, J. E. (1995). Organizational and professional commitment in professional and nonprofessional organizations. *Administrative Science Quarterly, 40*, 228-255. <http://dx.doi.org/10.2307/2393637>
- Wang, L., Tao, H., Ellenbecker, C. H., & Liu, X. (2012). Job satisfaction, occupational commitment and intent to say among Chinese nurse: a cross-sectional questionnaire survey. *Journal of Advanced Nursing, 68*, 539-549. <http://dx.doi.org/10.1111/j.1365-2648.2011.05755.x>
- Welsch, H. P., & LaVan, H. (1981). Inter-relationship between organizational commitment and job characteristics, job satisfaction, professional behavior, and organizational climate. *Human Relations, 34*, 1079-1089. <http://dx.doi.org/10.1177/001872678103401205>

Xu, L., & Bassham, L. S. (2010). Reexamination of factor structure and psychometric properties of the three-component model of organizational commitment. *North American Journal of Psychology*, 10, 297-312.

Appendix A

The 18-item scale in the original Thai language.

Table A1. แบบสอบถามสำหรับการวิจัย ความผูกพันต่อวิชาชีพครู

ข้อความ	ระดับความผูกพัน				
	1	2	3	4	5
1. ข้าพเจ้าเชื่อว่าวิชาชีพครูมีความสำคัญในการพัฒนาคน					
2. ข้าพเจ้าเชื่อมั่นและศรัทธาในวิชาชีพครูมาโดยตลอด					
3. ข้าพเจ้าเชื่อว่าวิชาชีพครูเป็นวิชาชีพที่ได้รับการยอมรับจากสังคม					
4. ข้าพเจ้ารู้สึกว่าเป็นส่วนหนึ่งของชีวิตข้าพเจ้า					
5. ข้าพเจ้ารู้สึกมีความภาคภูมิใจที่ได้ประกอบวิชาชีพครู					
6. ข้าพเจ้ารู้สึกมีความสุขที่ได้ประกอบวิชาชีพครู					
7. ข้าพเจ้าได้ใช้ความรู้ในการปฏิบัติงานในหน้าที่ครูอย่างเต็มความสามารถ					
8. ข้าพเจ้ามุ่งมั่นทุ่มเทในการปฏิบัติหน้าที่ครูเพื่อให้ลูกศิษย์ประสบความสำเร็จ					
9. ข้าพเจ้ายึดมั่นต่อจรรยาบรรณวิชาชีพครู ในการปฏิบัติหน้าที่อย่างเคร่งครัด					
10. ข้าพเจ้าเข้าร่วมกิจกรรมที่เกี่ยวข้องกับวิชาชีพครู เช่น อบรม สัมมนา เป็นต้น					
11. ข้าพเจ้าพัฒนาตนเองในวิชาชีพ เช่น อ่านหนังสือ วารสาร และการทำงานวิจัยใน ชั้นเรียน เป็นต้น					
12. ข้าพเจ้าเสียสละเวลาส่วนตัวในการพัฒนาการเรียนการสอน					
13. ข้าพเจ้าคิดว่าวิชาชีพครูทำให้ข้าพเจ้ามีโอกาสก้าวหน้าในวิชาชีพมากขึ้น					
14. ข้าพเจ้าคิดว่าการประกอบวิชาชีพครูทำให้ชีวิตมั่นคง					
15. ข้าพเจ้าคิดว่าวิชาชีพครูมีสวัสดิการและรายได้ที่เพียงพอในอนาคต					
16. ข้าพเจ้าคิดว่าไม่มีอาชีพใดเหมาะสมกับข้าพเจ้ามากไปกว่าวิชาชีพครู					
17. ข้าพเจ้าไม่มีทางเลือกอื่นจึงจำเป็นต้องประกอบวิชาชีพครู					
18. ข้าพเจ้าคิดว่าแม้มีอาชีพอื่นที่ดีกว่า ข้าพเจ้าก็ยังคงประกอบวิชาชีพครู					

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