Causal Factors Influencing Competency-Based Language Teaching Effectiveness: A Structural Equation Model of Elementary Teachers in Thailand

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ABSTRACT

Thailand continues to face persistent challenges in English language proficiency, as evidenced by consistently low national test scores such as the 2022 O-NET Grade 6 average of only 32.59 out of 100. This study aimed to investigate the causal factors influencing the effectiveness of competency-based language instruction among primary school teachers under the Amnat Charoen Primary Educational Service Area. Specifically, the objectives were to (1) develop and validate a causal model of teachers' instructional effectiveness in competency-based language learning, (2) examine the model's fit with empirical data, and (3) explore the direct and indirect effects of related factors. The sample consisted of 252 primary school English teachers, one from each school in the province, selected through simple random sampling. Data were collected using a validated questionnaire covering six dimensions—teacher personality, classroom environment, teaching behavior, academic competence, professional attitude, and work motivation—and were analyzed using descriptive statistics, correlation, confirmatory factor analysis, and structural equation modeling (SEM) with Mplus. The proposed causal model showed a good fit with empirical data ($\chi^2/df = 1.614$, CFI = 0.989, RMSEA = 0.049). Key direct predictors of teaching effectiveness included teaching behavior, work motivation, and classroom environment. Indirect pathways were also observed, such as the influence of academic competence mediated by teaching behavior and classroom environment. The findings highlight the importance of teacher development programs that emphasize effective instructional practices, motivation enhancement, and supportive learning environments. Practical implications include the design of targeted professional development and policy measures that address teacher motivation and instructional behavior as levers for improving language education outcomes in Thailand.

Keywords: Learning Management Effectiveness; Language Learning; Primary School Teachers; Causal Model; Structural Equation Modeling

Introduction

"Thailand ranks among the lowest in Asia for English proficiency, with EF EPI 2022 placing the country at 97th out of 111 worldwide." This international ranking underscores a persistent crisis in English language education, one that threatens students' competitiveness in the 21st century. Locally, the situation is equally concerning: the 2022 O-NET results for 3,135 Grade 6 students in Amnat Charoen Province revealed an average score of only 32.59 out of 100 (NIETS, 2023). Such statistics not only reflect deficiencies in language learning outcomes but also highlight systemic weaknesses in curriculum implementation and teacher preparation.

Although Thailand has adopted a competency-based curriculum intended to promote learner-centered approaches and 21st-century skills (Ministry of Education, 2022), its impact

remains limited. Many teachers lack adequate knowledge and skills to translate competency-based principles into classroom practice (Yangtrong, 2016; Sriwongrat & Janruchai, 2017). Institutional support is also inconsistent, leaving teachers underprepared and undersupported. These challenges suggest that the success of competency-based learning hinges not only on curriculum policy but also on teacher effectiveness at the classroom level.

International research consistently emphasizes teacher effectiveness as the most influential factor in student achievement. Borich (2004) stressed the importance of instructional clarity, classroom management, and diverse teaching strategies. Hu and Bentler (1999) and Byrne (2012) further advanced methodological approaches, showing how structural equation modeling (SEM) can validate complex educational frameworks. In Thailand, previous studies have identified key factors such as teacher personality (Setthithorn, 1980; Saenkhwa, 2009), teaching behavior (Flanders, 1970; Thitisupakul, Thepsang, Bursirirak, & Pootiriyawattana, 2016), and motivation (Somporn, 1999; Khian Dee, 2021) as critical drivers of instructional outcomes. However, most of these works either focus on isolated variables or rely on traditional statistical techniques, leaving gaps in understanding the multidimensional and causal nature of teacher effectiveness.

Moreover, earlier local studies (Thongrot, 1998; Sonachoti, 2001; Chaibang, 2001; Siwarom, 1999; Kinavong & Panitchaphoninchai, 2001) identified broad categories such as knowledge, skills, motivation, and classroom climate as predictors of teaching effectiveness. Yet these findings are fragmented, often context-specific, and rarely integrated into a holistic framework. Few have applied SEM to test both direct and indirect influences among these factors in Thai primary education, leaving an empirical gap in understanding how multiple dimensions interact to shape teaching effectiveness.

Given this context, the present study aims to develop and validate a structural model of causal factors influencing the effectiveness of competency-based language learning management among primary school teachers in Amnat Charoen Province. This research contributes theoretically by synthesizing diverse domains of teacher effectiveness into a coherent causal model. Practically, it offers evidence-based insights for teacher development programs and educational policy interventions, particularly in rural contexts where competency-based reforms are most urgently needed.

Research Objectives

1. To develop a causal model of the learning management effectiveness in competency-based language learning among elementary school teachers under the Amnat Charoen Primary Educational Service Area Office.
2. To examine the goodness of fit between the developed causal model and the empirical data.
3. To investigate the direct and indirect influences affecting the learning management effectiveness in competency-based language learning among elementary school teachers under the Amnat Charoen Primary Educational Service Area Office.

Methodology

1. Research Design

This study employed quantitative causal research design using structural equation modeling (SEM). The primary objective was to develop and validate a causal model of competency-based language learning effectiveness among elementary school teachers. SEM was chosen because it is appropriate for testing complex direct and indirect causal relationships among latent constructions.

2. Population and Sample

The population consisted of 1,571 government teachers from 252 elementary schools under the Amnat Charoen Primary Educational Service Area Office in 2023. The sample included 252 English language teachers, one from each school, selected through simple random sampling. The sample size satisfied the minimum requirements for SEM analysis according to Cohen (1988) and Westland (2010).

3. Instruments and Procedures

A structured questionnaire was developed through an extensive literature review and expert consultation. It consisted of three parts:

Part 1: Demographic information.

Part 2: Causal factors across six dimensions: Teacher personality (PER), Classroom environment (ENV), Teacher's instructional behavior (BEH), Academic competence of teachers (ACA), Professional attitude (ATT) and Work motivation (MOT). Reliability coefficients (Cronbach's alpha) for each construct ranged from 0.81 to 0.93, confirming strong internal consistency.

Part 3: Effectiveness of competency-based language instruction, adapted from Borich (2004), consisting of five aspects: clarity of lessons, variety of teaching strategies, teacher engagement, effectiveness of student learning processes, and promotion of student achievement.

Content validity was verified by five experts, with IOC values ranging from 0.80 to 1.00. The instrument was piloted with 30 teachers from schools outside the main sample. Feedback from the pilot led to revisions in wording and item clarity. Data completeness was carefully checked; missing values were addressed using full information maximum likelihood (FIML). Assumptions of SEM were tested, including multivariate normality (Mardia's coefficient), linearity, and absence of multicollinearity. Additionally, measurement invariance across gender groups was examined to ensure model stability.

4. Data Collection

Official permission was obtained from relevant educational authorities. Questionnaires were distributed online, and responses were screened for completeness. A total of 252 fully complete questionnaires were deemed valid and included in the analysis.

5. Data Analysis

Data were analyzed using Mplus version 8 with maximum likelihood estimation (MLE). Analytical procedures included:

Descriptive statistics (mean, standard deviation) for demographic and main variables.

Correlation analysis (Pearson's r) among variables.

Confirmatory factor analysis (CFA) to assess the measurement model, including factor loadings, reliability, and validity indices.

Structural equation modeling (SEM) examines causal relationships among latent constructs.

Model fit was evaluated using multiple indices: χ^2/df, CFI, TLI, SRMR, and RMSEA (Hu & Bentler, 1999). Standard errors and 95% confidence intervals were reported for all path coefficients.

Limitations of Methodology

While SEM is appropriate for examining complex causal relationships, this study has limitations. First, the questionnaire relied on self-reported data, which may introduce social desirability bias. Second, the pilot study involved only 30 teachers, which may limit the generalizability of reliability estimates. Third, although measurement invariance was tested across gender, other subgroup analyses (e.g., teaching experience, school size) were not conducted. Finally, the cross-sectional design restricts causal inference to statistical

associations rather than longitudinal validation. These limitations should be considered when interpreting the findings and may serve as directions for future research.

Results

Part 1: Descriptive Statistics

The descriptive statistics for all observed variables are presented in Table 1. The overall effectiveness of competency-based language learning management was rated at a high level (M = 4.50, SD = 0.50). Among the causal factors, Professional attitude and Work motivation received the highest mean scores (M = 4.58, SD = 0.66 for both), followed by Classroom environment (M = 4.57, SD = 0.57). This indicates that respondents generally rated these factors highly.

The skewness values for all variables range from -1.405 to -0.267, indicating that the data is negatively skewed, with most scores clustered toward the higher end of the scale. The kurtosis values, ranging from -1.259 to 1.802, suggest a mix of platykurtic (flatter) and leptokurtic (more peaked) distributions. Despite these variations, all skewness and kurtosis values fall within the generally accepted range of ±2, which indicates sufficient normality for conducting Structural Equation Modeling (SEM) analysis.

Table 1. Descriptive statistics of observed variables

Variables	M	SD	Skewness	Kurtosis
Teacher personality (PER)	4.50	0.62	-.672	-.055
Classroom environment (ENV)	4.57	0.57	-.601	-.962
Teacher's instructional behavior (BEH)	4.41	0.68	-.267	-1.259
Academic competence of teachers (ACA)	4.26	0.77	-.368	-972
Professional attitude (ATT)	4.58	0.66	-1.405	.306
Work motivation (MOT)	4.58	0.66	-1.371	1.802

Part 2: Correlation Matrix

The intercorrelations among the six causal factors and instructional effectiveness are displayed in Table 2. All correlations were positive and significant ($p < .01$), ranging from moderate ($r = 0.35$) to very strong ($r = 0.88$), supporting the hypothesized relationships among variables.

Table 2. Correlation matrix of study variables

Variables	PHY	EMO	SOC	COG	CUR	SUB	PRO	MED	EVA	COC	AFC	BEI	ACM	REM	POM	TSRE	CLEN	Y1	Y2	Y3	Y4	Y5
PHY	1																					
EMO	0.549	1																				
SOC	0.555	0.509	1																			
COG	0.538	0.399	0.531	1																		
CUR	0.495	0.359	0.252	0.499	1																	
SUB	0.277	0.240	0.185	0.525	0.801	1																
PRO	0.487	0.368	0.311	0.603	0.772	0.673	1															
MED	0.509	0.325	0.284	0.374	0.717	0.562	0.600	1														
EVA	0.450	0.295	0.268	0.365	0.699	0.578	0.746	0.68	1													

Variables	PHY	EMO	SOC	COG	CUR	SUB	PRO	MED	EVA	COC	AFC	BEI	ACM	REM	POM	TSRE	CLEN	Y1	Y2	Y3	Y4	Y5
COC	0.337	0.371	0.200	0.361	0.567	0.459	0.471	0.389	0.456	1												
AFC	0.547	0.486	0.404	0.419	0.651	0.452	0.535	0.571	0.545	0.759	1											
BEI	0.399	0.466	0.357	0.407	0.550	0.439	0.473	0.396	0.363	0.669	0.648	1										
ACM	0.543	0.399	0.200	0.424	0.533	0.343	0.400	0.492	0.441	0.423	0.589	0.505	1									
REM	0.282	0.325	0.240	0.376	0.572	0.459	0.446	0.403	0.463	0.562	0.575	0.692	0.687	1								
POM	0.322	0.383	0.246	0.378	0.538	0.440	0.436	0.413	0.493	0.502	0.553	0.735	0.648	0.877	1							
TSRE	0.405	0.408	0.325	0.531	0.668	0.618	0.628	0.616	0.537	0.365	0.447	0.516	0.394	0.555	0.583	1						
CLEN	0.419	0.417	0.315	0.504	0.474	0.411	0.662	0.347	0.429	0.236	0.326	0.259	0.241	0.310	0.221	0.458	1					
Y1	0.476	0.380	0.243	0.564	0.780	0.667	0.743	0.654	0.666	0.584	0.635	0.614	0.587	0.693	0.584	0.635	0.441	1				
Y2	0.497	0.358	0.248	0.530	0.822	0.720	0.701	0.785	0.705	0.594	0.693	0.606	0.573	0.630	0.609	0.655	0.376	0.887	1			
Y3	0.318	0.480	0.204	0.501	0.693	0.601	0.598	0.539	0.538	0.574	0.573	0.673	0.545	0.805	0.753	0.691	0.356	0.825	0.786	1		
Y4	0.487	0.415	0.285	0.525	0.779	0.617	0.673	0.677	0.703	0.578	0.722	0.624	0.62	0.735	0.700	0.641	0.364	0.843	0.849	0.858	1	
Y5	0.282	0.340	0.209	0.450	0.711	0.650	0.678	0.64	0.702	0.496	0.514	0.614	0.461	0.724	0.722	0.720	0.393	0.781	0.766	0.878	0.852	1

Part 3: Measurement Model

The factor loadings for all observed variables were statistically significant ($p < .001$), with values ranging from 0.42 (for CLEN) to 0.963 (for Y4), which exceeds the recommended threshold of 0.40. All latent variables demonstrated high internal consistency and reliability, as indicated by composite reliability (CR) values greater than the recommended 0.70. The model fit indices also demonstrated an excellent fit to the data These results confirm that the measurement model is robust, valid, and reliable, justifying its use for further structural model analysis.

Table 3. Factor Loadings, Standard Errors, R^2, and Model Fit Indices for the Measurement Model

Latent variable	Observed variable	Estimate	S.E.	Est./S.E	R^2	P-Value	Model fit indices
ACA	CUR	1.000	15.172	0.064	0.969	0.000	χ^2 = 1.58e-6, df = 1
	SUB	0.794	10.354	0.064	0.631	0.000	P-Value = 0.999
							χ^2/df = 0.000
							CFI = 1.000
							TLI = 1.000
							SRMR = 0.000
							RMSEA = 0.000
PER	PHY	0.782	0.059	10.386	0.611	0.000	χ^2 = 5.530, df = 2
	EMO	0.670	0.059	7.661	0.449	0.000	P-Value = 0.0630
	SOC	0.742	0.059	9.252	0.550	0.000	χ^2/df = 2.765
	COG	0.677	0.059	7.797	0.458	0.000	CFI = 0.989
							TLI = 0.967
							SRMR = 0.01 9
							RMSEA = 0.084

Latent variable	Observed variable	Estimate	S.E.	Est./S.E	R^2	P-Value	Model fit indices
BEH	PRO MED EVA	0.786 0.808 0.954	0.049 0.051 0.047	13.483 10.779 17.874	0.619 0.653 0.910	0.000 0.000 0.000	$\chi^2 = 1.720$, df = 1 P-Value = 0.189 $\chi^2/df = 1.720$ CFI = 0.998 TLI = 0.994 SRMR = 0.013 RMSEA = 0.054
ATT	COC AFC BEI	1.000 0.745 0.868	0.045 0.045 0.049	17.601 16.230 11.642	1.000 0.556 0.754	0.000 0.000 0.000	$\chi^2 = 0.871$ df = 1 P-Value = 0.351 $\chi^2/df = 0.871$ CFI = 1.000 TLI = 1.000 SRMR = 0.013 RMSEA = 0.000
MOT	ACM REM POM	0.665 0.978 0.898	0.047 0.033 0.034	10.688 28.345 24.052	0.443 0.956 0.806	0.000 0.000 0.000	$\chi^2 = 5.400$, df = 2 P-Value = 0.067 $\chi^2/df = 2.700$ CFI = 0.994 TLI = 0.990 SRMR = 0.037 RMSEA = 0.082
ENV	TSRE CLEN	0.567 0.816	18.416 4.187	0.052 0.052	0.960 0.218	0.000 0.000	χ^2 =0 .315, df = 1 P-Value = 0.574 $\chi^2/df = 0.315$ CFI = 1.000 TLI = 1.000 SRMR = 0.019 RMSEA = 0.000
EFF	Y1 Y2 Y3 Y4 Y5	0.879 0.880 0.894 0.963 0.884	0.023 0.025 0.022 0.018 0.025	35.607 31.717 38.151 49.419 31.757	0.772 0.774 0.799 0.928 0.781	0.000 0.000 0.000 0.000 0.000	$\chi^2 = 2.03$, df = 2 P-Value = 0.362 $\chi^2/df = 1.015$ CFI = 1.000 TLI = 1.000 SRMR = 0.003 RMSEA = 0.008

Part 4: Structural Model

The structural model was tested using Structural Equation Modeling (SEM). The model demonstrated a good fit to the data, as indicated by the fit indices: $\chi^2/df = 1.614$, CFI = 0.989, TLI = 0.977, SRMR = 0.029, and RMSEA = 0.049.

As hypothesized, several direct effects were statistically significant ($p < .05$). Teaching behavior (BEH) ($\beta = 0.478$, $p < .001$), work motivation (MOT) ($\beta = 0.379$, $p < .001$), and classroom environment (ENV) ($\beta = 0.249$, $p = .008$) all had a significant positive direct effect on instructional effectiveness (EFF).

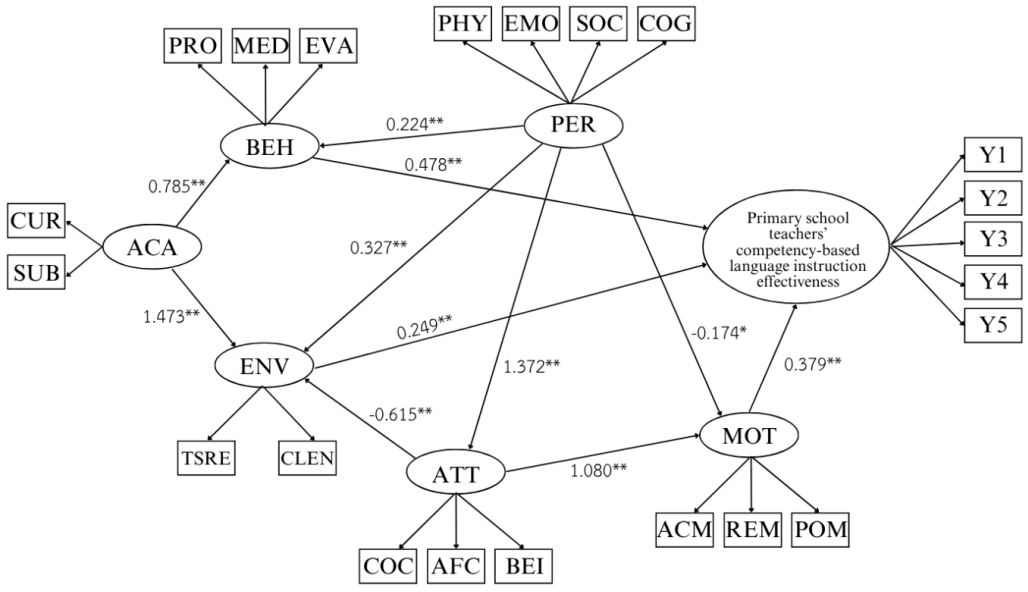
The analysis also revealed significant indirect effects. Academic competence (ACA) had a significant indirect effect on instructional effectiveness (EFF) through both teaching behavior (β = 0.785, p < .001) and classroom environment (β = 1.473, p < .001).

Table 4. Unstandardized Direct, Indirect, and Total Effects

Path	Direct Effect (β)	Indirect Effect (β)	Total Effect (β)	P-Value
BEH to EFF	0.478	-	0.478	0.000
ENV to EFF	0.249	-	0.249	0.008
MOT to EFF	0.379	-	0.379	0.000
PER to EFF	-0.06	0.131	0.071	0.195
ATT to EFF	0.006	0.256	0.262	0.914
ACA to EFF	-	0.742	0.742	0.000
ACA to BEH	0.785	-	0.785	0.000
ACA to ENV	1.473	-	1.473	0.000
ATT to MOT	1.08	-	1.08	0.000
ATT to ENV	-0.615	-	-0.615	0.002
PER to BEH	0.224	-	0.224	0.000
PER to ATT	1.372	-	1.372	0.000
PER to MOT	-0.174	-	-0.174	0.02
PER to ENV	0.327	-	0.327	0.000
χ^2/df = 1.614, CFI = 0.989, TLI = 0.977, SRMR = 0.029 และ RMSEA = 0.049				

Part 5: Model Diagrams

Figure 1: Structural Equation Model of Causal Factors Influencing the Competency-Based Language Learning Management Effectiveness of Primary School Teachers under the Amnat Charoen Primary Educational Service Area Office



χ^2/df = 1.614, CFI = 0.989, TLI = 0.977, SRMR = 0.029, RMSEA = 0.049

**Statistically significant at the .01 level * Statistically significant at the .05 level

Discussion

The findings of this study shed light on the multifaceted causal factors influencing the effectiveness of competency-based language learning management among primary school teachers in Amnat Charoen. Our structural equation model revealed that teaching behavior, work motivation, and classroom environment directly impact learning management effectiveness. Furthermore, teacher personality and characteristics, professional attitude, and academic ability exert significant indirect effects. These interrelated factors form a complex network, contributing to an enhanced understanding of effective teaching in the 21st century context.

Teacher's instructional behavior

The results consistently show teaching behavior as the most influential direct factor on learning management effectiveness. This highlights the critical role of teachers' pedagogical approaches, including their use of appropriate and clear teaching methods, as well as their ability to design stimulating and engaging learning activities. Such behaviors directly facilitate students' effective development towards curriculum goals. This finding resonates strongly with established educational theories, such as those by Milman (2012) and Good (1973), who have long emphasized the profound impact of teaching behaviors on student achievement. It also aligns with more recent empirical work, like that by Thitisupakun et al. (2016), which specifically found a significant relationship between teaching management and language learning efficiency.

However, it's crucial to acknowledge the nuanced interplay here. While our study confirms the general importance of teaching behavior, future research could explore specific teaching behaviors that are particularly effective within the competency-based language learning framework in Thai primary schools, potentially comparing them with international best practices.

Work Motivation

Work motivation, encompassing both intrinsic and extrinsic drivers, was found to directly influence teacher effectiveness by impacting their enthusiasm, effort, and responsibility in managing learning. This result aligns with foundational motivational theories, as posited by Sangtrakoon (2011) and Suthatsanee (1999), who underscore motivation as an internal driving force for work performance. Furthermore, our findings are consistent with contemporary research, such as that by Khiandee (2021) and Sripongpert (2018), which identifies motivation as a critical determinant of teacher performance in the 21st century.

While the positive direct effect is clear, the extremely high explained variance observed in our model, particularly concerning the factors influencing work motivation, warrants deeper analytical engagement. This high variance suggests that the identified factors might explain an unusually large proportion of the variability in work motivation. While this indicates a strong model, it also prompts a critical reflection: are there unmeasured contextual or cultural factors unique to the Amnat Charoen educational setting that contribute to this heightened influence? Or does it suggest a particular sensitivity of teachers in this region to these motivational drivers? This finding contrasts with some international studies that might report lower explained variances, potentially due to different cultural contexts or educational systems. Future qualitative studies could explore teachers' perceptions of motivation in this specific context to provide further insights.

Classroom Environment

A supportive classroom environment emerged as another direct influencer of learning management effectiveness. A positive environment stimulates student interest and fosters collaboration, which are crucial for competency-based learning. These findings are consistent with the work of Laddayaem (2018) and Sasantia (2017), who highlighted the significant

impact of classroom environments on learning outcomes. The creation of such an environment by teachers contributes directly to student engagement and, consequently, to effective learning.

Teacher personality

This model indicated that teacher personality and characteristics indirectly influence learning effectiveness through teaching behavior. Teachers possessing positive traits such as confidence, emotional stability, and leadership skills are better equipped to deliver lessons effectively and build trust with students. They also contribute to fostering an open and safe learning environment. These findings are consistent with theories from Setthithorn (1980) and research by Saenkwa (2009), emphasizing personality as a vital component of effective teaching. This indirect pathway suggests that nurturing these personal attributes in teachers can significantly enhance their pedagogical impact.

Professional Attitude

Interestingly, professional attitude was found to indirectly influence teaching effectiveness, predominantly through work motivation. Teachers with a positive attitude towards their profession are more inclined to strive for self-improvement and demonstrate a deep commitment to student outcomes. This aligns with the perspectives of Prawanpruek (1981) and research by Buddee (2005).

However, a critical finding requiring deeper analysis is the negative indirect pathway of professional attitude through classroom environment. This unexpected finding warrants careful consideration. While a positive professional attitude is generally beneficial, this specific pathway suggests that, in certain contexts within Amnat Charoen, an overly rigid or perhaps perfectionistic professional attitude might inadvertently lead to a less conducive or more restrictive classroom environment. This could manifest as teachers adhering strictly to curricula without flexibility, potentially stifling student-led exploration or collaborative activities, which are vital in competency-based learning. This discrepancy with general positive expectations for professional attitude necessitates further investigation, possibly through qualitative interviews, to understand the underlying mechanisms in this specific regional context. This contrasts with broader international research that often portrays professional attitude as uniformly positive in its influence across all pathways.

Academic competence of teachers

Finally, academic ability indirectly influenced teaching effectiveness through both teaching behavior and classroom climate. Teachers with strong subject knowledge are better equipped to design effective activities and deliver content efficiently, thereby enhancing student achievement in a systematic manner. Furthermore, a deep understanding of the subject matter allows teachers to respond to student queries more effectively, fostering a sense of confidence and an intellectually stimulating classroom climate. This highlights that deep content knowledge is not just about imparting facts, but also about shaping the entire learning experience.

Theoretical and Practical Implications

This model offers significant theoretical implications by demonstrating the complex interplay of various teacher-related factors influencing competency-based language learning effectiveness. It extends existing theories by identifying both direct and indirect pathways, particularly highlighting the mediating roles of teaching behavior, work motivation, and classroom environment. The findings suggest a holistic approach to teacher development, moving beyond individual skills to encompass psychological and environmental factors. The unexpected negative indirect effect of professional attitude, while localized, prompts a re-evaluation of how certain attributes, when taken to an extreme or in specific contexts, might have unintended consequences.

From a practical standpoint, these findings offer actionable insights for educational policymakers and administrators in Amnat Charoen. Interventions aimed at enhancing teacher effectiveness should focus on:

Professional Development: Designing professional development programs that specifically target effective teaching behaviors in competency-based language learning, including modern pedagogical approaches and activity design.

Motivational Support: Implementing strategies to boost both intrinsic and extrinsic work motivation among teachers, such as recognition programs, opportunities for professional growth, and creating supportive work environments.

Classroom Management Training: Providing training on creating positive and collaborative classroom environments that stimulate student engagement.

Holistic Teacher Development: Considering programs that foster positive personality traits and address potential pitfalls of rigid professional attitudes, ensuring they contribute constructively to the classroom environment.

Targeted Support: Identifying teachers who might be struggling with specific aspects of their professional attitude or classroom management and offering tailored support.

These applications are particularly relevant to the Amnat Charoen context, where supporting teachers in adapting to competency-based approaches is crucial for enhancing student outcomes.

Limitations

Despite its valuable contributions, this study has several limitations that warrant consideration for future research. Firstly, the cross-sectional design limits our ability to infer causality definitively, although the use of Structural Equation Modeling helps establish plausible relationships. Longitudinal studies would provide stronger evidence of causal pathways. Secondly, the study relied primarily on self-reported data, which may be subject to social desirability bias. Future research could incorporate observational data or student performance metrics to triangulate findings. Thirdly, while the model demonstrated good fit, the unusually high explained variance for certain factors suggests that there might be unique contextual nuances within Amnat Charoen that warrant further qualitative exploration to fully understand the local dynamics. Finally, the study was conducted within a specific geographical area (Amnat Charoen primary schools), which may limit the generalizability of the findings to other regions or educational levels. Future research could replicate this study in diverse contexts to assess the universality of these relationships.

Recommendations

Based on the findings on factors influencing competency-based language learning management, the following recommendations aim to enhance teachers' instructional effectiveness in Amnat Charoen. Prioritization reflects the strength of direct effects identified in the structural model.

1. Prioritize Key Factors

Teaching behavior had the strongest direct impact, followed by work motivation and classroom environment. Efforts should focus primarily on these areas.

1.1. Enhance Teaching Behavior

Professional Learning Communities (PLCs): Establish weekly school-based PLCs for primary language teachers to co-plan lessons, share strategies, and provide peer feedback.

Mentorship and Coaching: Pair novice teachers with experienced mentors for observation and targeted coaching on instructional skills.

Hands-On Workshops: Conduct workshops on active learning, game-based learning, and project-based approaches tailored to primary language teaching.

1.2. Boost Work Motivation

Recognition: Implement monthly “Teacher Spotlight” programs and acknowledge exceptional effort or innovation.

Career Path Incentives: Link performance to opportunities for leadership or mentorship roles.

Supportive Measures: Provide access to mental health services, flexible schedules, and subsidized professional development.

1.3. Foster a Positive Classroom Environment

Physical Arrangement: Offer guidance on flexible seating and collaborative layouts.

Positive Interactions: Train teachers to use reinforcement strategies, peer-led activities, and growth mindset approaches.

Student Voice: Encourage student participation in setting classroom norms and selecting project topics.

1.4. Develop Academic Competence

Conferences and Workshops: Support attendance at subject-specific professional events.

Inter-School Collaboration: Facilitate forums for sharing content knowledge and best practices.

1.5. Promote a Positive Professional Attitude

Celebrating Achievement: Organize events to recognize teaching innovations beyond traditional awards.

Community Engagement: Encourage participation in local events to strengthen professional pride and community recognition.

2. Further Studies

The current study serves as a foundational step. Future research should build on these findings to provide a more comprehensive and robust understanding of teacher effectiveness.

2.1 Expanding the Scope: To improve generalizability, future research should expand the sample population to include teachers in neighboring provinces or other regions of Thailand.

2.2 Investigating Additional Variables: Future studies should incorporate other potential influencing factors, such as school leadership, parental involvement, and the role of technology in learning, to create a more comprehensive causal model.

2.3 Mixed Methods Research: Combining quantitative (surveys) and qualitative (in-depth interviews) methods can provide a deeper understanding of the "why" behind the findings, especially for unexpected results like the negative indirect effect of professional attitude.

2.4 Experimental Research: To test the practical application of this model, future studies should employ an experimental design in real school settings. This would involve implementing a targeted intervention (e.g., a professional development program focused on teaching behaviors) and measuring its impact on teacher effectiveness over time.

Conclusion

This study developed and validated a causal model explaining the effectiveness of competency-based language learning management among primary school teachers in Amnat Charoen Province. The results confirmed that teaching behavior, work motivation, and

classroom environment are the strongest direct predictors, while academic competence, professional attitude, and teacher personality exert significant indirect effects. The findings not only strengthen the theoretical understanding of teacher effectiveness but also provide practical guidance for policy and practice. In particular, interventions that prioritize teaching behavior and teacher motivation are likely to yield the greatest improvements in instructional effectiveness. Future studies should extend the scope to other regions, incorporate additional variables such as school leadership and technology use, and apply mixed-methods approaches to enrich insights. Overall, the study contributes new knowledge by contextualizing teacher effectiveness within rural Thailand and advancing discussions on competency-based education in developing countries.

Acknowledgement

The findings of this study contribute new knowledge by highlighting that the effectiveness of competency-based language instruction among primary school teachers does not stem solely from individual capabilities or behaviors. Rather, it results from a complex interplay between internal factors—such as academic competence, professional attitudes, motivation, and personality—and external factors—such as classroom climate and organizational support. This insight underscores the importance of adopting a holistic approach to enhancing teacher effectiveness. Such an approach should integrate the development of skills, attitudes, motivation, and a supportive working environment in order to foster sustainable transformation at both the individual and systemic levels of education.

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