

# A Confirmatory Factor Analysis Model Of Academic Quality Management Of English Program Schools Under The Office Of The Basic Education Commission In Bangkok

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## ABSTRACT

The objective of this research is to analyze the elements of the system of academic quality management of English program schools under Thailand's OBEC in Bangkok. The samples are 18 school principals of English program schools under Thailand's OBEC in Bangkok, 19 school deputy directors of academic department, 20 heads of English program department and 360 teachers of English program department or 417 samples in total, selected with the stratified sampling technique. The tool used in this research is a questionnaire with the reliability value of 0.958. The primary assumption for the Confirmatory Factor Analysis has the value of Kaiser Meyer-Olkin of 0.803, and the value from Bartlett's test of 2825.585, with the statistical significance level of 0.01. The outcomes from the CFA on the system of academic quality management of English program schools under Thailand's OBEC in Bangkok show that the concurrence with the empirical data is as follows:  $\chi^2 = 1.77$ , p-value = 0.184,  $\chi^2/df = 1.77/1$ , GFI = 1.00, RMSEA = 0.043, AGFI = 0.97. The weights of the elements fall in the range of 0.44- 0.98, as follows: The weight of the element of curriculum development is 0.44, the weight of the element of teaching and learning management is 0.85, the weight of the element of educational measurement and evaluation is 0.98, the weight of the element of educational supervision is 0.71, the weight of the element of educational media, innovation, technology development is 0.80, the weight of the element of internal quality assurance system development is 0.93.

**keywords:** Academic quality management, English program schools, Confirmatory Factor Analysis.

## 1. Introduction

English is important as an international language. As such, English is used in academic journals, textbooks, and publications in many fields (Puagtes, 2020). Learning a language is an important option for developing the learning that leads to development of the society and the community (Premrirat, 2021). Organizing English language teaching at an international level is therefore an improvement in language proficiency and an important mission of educational development to develop learners to be quality people in terms of skills, characteristics and competencies that are important for being a global citizen (Grabe & Stoller, 2002; Ozek & Civelek, 2006). The United Nations supports bilingual or multilingual education at all levels of education as a way to promote social equality (UNESCO, 2003).

In the context of Thailand, the Ministry of Education, through the Office of the Basic Education Commission of Thailand, has set a policy for reforming English language teaching and learning by implementing the English language teaching and learning reform guidelines since 2015 (Ministry of Education Thailand, 2017). Using the Common European Framework of Reference for Languages (CEFR), the focus on English language teaching has been adjusted to be in line with the nature of learning by emphasizing Communicative Language Teacher (CLT) (Office of the Basic Education Commission, 2019). The above policy has opened up opportunities for educational institutions that are ready to teach English to expand their special English language teaching projects. They can be developed into International Program (IP), English Program (EP), or Mini English Program (MEP) according to their potentials. This is the origin of bilingual schools, a new alternative education arrangement that is very important for educational development that will develop effective English communication skills of students as global citizens (Ministry of Education, 1999). Bilingual education has therefore become an important option for parents (Ourairat, 2011).

Even though the importance of English language has made bilingual schools play increasingly important roles, parents are increasingly interested in sending their children to bilingual schools (Wattanatorn, 2020). Nevertheless, effective bilingual school management is very important for the achievement of bilingual education. This is because the nature of bilingual schools is very different from general school management, teachers must understand children with diverse cultural differences (Salinas, Franquiz and Guberman, 2006). In addition, most schools still face several problems in running bilingual school projects (Pattaraporn Noigor, 2019), such as the problem that the increase in number of bilingual schools does not match the number of students who do not speak English as their mother tongue. Currently, there has not been

any research work that clearly confirms the adaptation model of bilingual education management (Ourairat, 2011).

Many problems of bilingual schools that are encountered have reflected the quality of education management in Thailand that need supports in terms of bilingual education (Chayasatit, 2020). There is no bilingual education management program that prepares administrators with the knowledge and skills to manage schools of this type (Castro-Feinberg, 1999). As for Thailand, there is also no clear guideline for bilingual school management. There is also no clear models and indicators of the quality of bilingual education management (Prommar, et al., 2014). The main problems are the knowledge and understanding of how to successfully manage a school with specific characteristics, the management of which needs comprehensive understanding. As Montecel and Cortez (2002) explained, school managers/administrators must have thorough understanding of the principles and reasons for managing bilingual schools, including being bilingual experts and encouraging cooperation from all parties. Similarly, Sawangsang (2012) stated that the most important problem that prevents English language teaching from being successful is that schools lack management models, causing schools to manage education through trial and error, without clear goals, directions, or management methods. Furthermore, research by a group of academics in Thailand, such as Arkkachot, et al. (2019), Senachit & Trakulmututa (2017), Noead (2016), Boonsattha (2016), this group of researchers have found similar problems, namely, academic management in bilingual schools still having not quality, which is caused by many factors, such as lack of native foreign teachers for teaching and learning, lack of curricula that meet the needs, the need of curriculum for development, the teaching and learning process, and the measurement and evaluation (Rangsai & Lenanant, 2018). In addition, they have also suggested ways to solve the problems concerning the quality of bilingual schools that the development of the quality of academic management in these educational institutions should be accelerated, especially the application of the principles of quality curriculum management to drive operations, analyze weaknesses and strengths in organizing teaching and learning activities, plan for the implementation of measurement and evaluation, systematically and continuously, evaluate the learning management in real situations, and develop measurement and evaluation tools to meet standards (Chaiyakinee & Sonchan, 2023). This can be done through the clear studies and research works on the components of academic quality management, which should have components that are different from the management of educational institutions with general curricula, in order to use them to solve the problems that educational institutions face.

However, this study has initially synthesized documents and research on the quality components of academic management of the English Program curriculum in bilingual schools in Thailand, consisting of Ministry of Education Thailand (2007), Office of the Basic Education Commission (2007), Kasira (2016), Phopraseart, (2001), Wonganudroj (2010), Tungkunan (2019), Wahachat (2010), Arkkachot, et al. (2019), Senachit & Trakulmututa (2017), Nooead (2016), Boonsattha (2016). In summary, the quality components of academic management of the English Program curriculum in bilingual schools are 1) curriculum development of educational institutions 2) teaching and learning management 3) measurement and evaluation of educational outcomes 4) educational supervision 5) development of innovative media and educational technology and 6) development of internal quality assurance systems in educational institutions. The researcher has used this as a theoretical data set because these studies are qualitative studies. The results of the studies can be used as references according to academic principles. Therefore, it is appropriate to test the consistency of the theory with the empirical data. Meanwhile, confirmatory factor analysis is an accepted method that is widely used to verify the structural validity of the created instrument that has a structure that is in accordance with the theory (Suksawang, 2018). It is a statistical technique that uses a sophisticated correlation technique. Factor analysis technique is used as a tool to check the structural validity of the variables to see if they are structured according to the theoretical definition and how they are consistent with the actual situation (Angsuchoti, et al., 2008). It also checks whether or not the structure of the model is different between different sample groups (Joreskog and Sorbom, 1996).

Therefore, this study aims to check the structural validity of theoretical data with empirical data. The components of academic management quality of the English Program curriculum of bilingual schools in Bangkok are collected from educational institutions in Bangkok, Thailand, because there are the most educational institutions teaching bilingual programs. The test is conducted to check the consistency of theoretical data with empirical data. The research results will be useful for educational institutions to use as information for management. The discovered components can be used to create a model for the management of educational institutions teaching bilingual programs. and continue to solve the problems of academic administration quality that educational institutions are facing.

## **2. Methodology**

### **2.1 Populations and Samples**

The populations used in the research are the school directors, the deputy directors of academic department, the head of the English Program, and teachers who teach in English Program, totaling 713 people. The sample used are the school director, the deputy director of academic department, the head of the English Program, and teachers who teach in the English Program, totaling 500 people. The sample size has been determined using the criteria of Tabachnick & Fidell (2007) who stated that the sample size using the confirmatory factor analysis technique of 500 people or more is considered very good. The samples are selected with stratified random sampling technique.

## **2.2 Variables**

Variables used in this study are derived from the synthesis of knowledge from document in order to create the conceptual framework. It has been found out that the variables that are components of quality of the academic management of English Program for bilingual schools in Bangkok (Academic Quality Management - AQM) are 1) Curriculum Management Development (CMD), 2) Teaching and Learning Management (TLM), 3) Measurement and Evaluation Management (MEM), 4) Educational Supervision Management (ESM), 5) Media and Educational Technology (MET), and 6) Educational Quality Assurance (EQA).

## **2.3 Research Tools**

The tool used in this research is a 5-scale rating questionnaire that has been designed and created under the review and supervision by 5 experts, with the Index of item objective congruence values between 0.60 and 1.00 in accordance with the rule by Rovinelli & Hambleton (1977), and has passed the reliability test through the analysis for Cronbach Alpha Coefficient (Cronbach, 1970) with the attained coefficient being 0.96 which show the high level of liability. The complete questionnaire includes all the six components and contains 53 statements for ranking.

## **2.4 Data Collection**

The research team has distributed the questionnaires through Google Form and postal service with 417 completely answered questionnaires or 83.40 percent returned, which are sufficient for the Confirmatory Factor Analysis.

## **2.5 Data Analysis**

The initial data analysis is done by using an instant computer program, with the rules and terms for the analysis set in accordance with the concept by Stevens (1992), and Tabachnick & Fidell (2007). The rules for the analysis for examination of the correspondence between theoretical data and empirical data are that the value is considered and there

must not be statistical significance ( $p > 0.05$ ) (Joreskog and Sorbom, 1996) whilst  $\chi^2/df$  is not as great as 2.00 (Bollen, 1989), Goodness of Fit Index (GFI) is greater than 0.95 (Joreskog and Sorbom, 1996), Adjusted Goodness of Fit Index (AGFI) is greater than 0.90, Comparative Fit Index (CFI) is greater than 0.95 (Hair, J.F. et al, 2010), Standardized RMR is lower than 0.08, and Root Mean Square Error of Approximation (RMSEA) is lower than 0.06 (Hu and Bentler, 1999).

**3. Results**

The results from the testing of the structural validity of the theoretical data and the empirical data concerning the components of the quality of academic management of English Program of bilingual schools in Bangkok are shown in Table 1-3 and Figure 1.

**Table 1** Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett’s Test of Sphericity

Variable	Bartlett's Test of Sphericity	Sig.	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.
Components of the Quality of Academic Management of English Program of Bilingual Schools in Bangkok (AQM)	2825.585	0.000	0.803

From Table 1, the results of the analysis of Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett’s Test of Sphericity show that the correlation matrix between variables is significantly different from the identity matrix at the 0.01 level and the Bartlett’s test of Sphericity value is 2825.585, which means that the model is statistically significant at the 0.01 level ( $p < 0.01$ ). In addition, it can be considered that the KMO value is 0.803, which is greater than 0.50, indicating that the relationship is very appropriate (Hutcheson & Sofroniou, 1999). Therefore, it can be concluded that the data are appropriate and can be used for analyzing the components.

**Table 2** Significant Results of the Reported Variables and Correlations

Variables	CDM	TLM	MEM	ESM	MET	EQA
Curriculum Development Management (CDM)	1.000					
Teaching and Learning Management (TLM)	0.500* *	1.000				

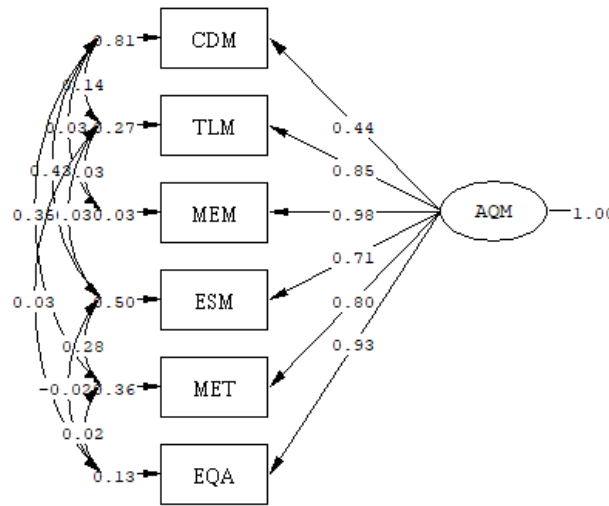
Measurement and Evaluation Management (MEM)	0.459*	0.774*	1.000			
Educational Supervision Management (ESM)	0.742*	0.562*	0.696*	1.000		
Media and Educational Technology (MET)	0.695*	0.662*	0.786*	0.752*	1.000	
Educational Quality Assurance (EQA)	0.407*	0.728*	0.720*	0.638*	0.767*	1.000

\*\*( $p < 0.01$ )

From Table 2, the results of the Pearson correlation coefficient analysis of the variables revealed that the components of academic management quality of the English Program of the bilingual school (AQM) and the components have positive and negative correlations with statistical significance at the 0.01 level ( $p < 0.01$ ). The components with relatively high relationships were the Measurement and Evaluation Management (MEM) and the Media and Educational Technology Management (MET), with a correlation coefficient of 0.786. The components with relatively low correlations are the Curriculum Development Management (CDM) and the Educational Quality Assurance (EQA), with the correlation coefficient of 0.407.

**Table 3** Results from the Confirmatory Factor Analysis of Components of the Quality of Academic Management of English Program of Bilingual Schools in Bangkok

Goodness of Fit Index	Criteria	Statistic	Outcomes	Reference
$\chi^2$	$p > 0.05$	0.18373	Passed	Joreskog and Sorbom (1996)
$\chi^2/df$	<2.00	1.77	Passed	Bollen (1989)
GFI	>0.95	1.00	Passed	Joreskog and Sorbom (1996)
AGFI	>0.90	0.97	Passed	Hair et al, (2010)
CFI	>0.95	1.00	Passed	Hair et al, (2010)
Standardized RMR	< 0.08	0.0079	Passed	Hu and Bentler (1999)
RMSEA	< 0.06	0.043	Passed	Hu and Bentler (1999)



Chi-Square=1.77, df=1, P-value=0.18373, RMSEA=0.043

**Figure 1** Results from the Confirmatory Factor Analysis of Components of the Quality of Academic Management of English Program of Bilingual Schools in Bangkok

From Table 3, the results of the confirmatory component analysis of the quality of academic management of the English Program of bilingual schools in Bangkok show that the theoretical data are consistent with the empirical data, with the static values passing all the specified criteria ( $\chi^2 = 0.18373$ ,  $\chi^2/df=1.77$ ,  $GFI=1.00$ ,  $AGFI=0.97$ ,  $CFI=1.00$ , Standardized  $RMR=0.0079$ ,  $RMSEA=0.043$ ). The component weight values considered, it has been found out that the weight values range from 0.44 to 0.98. All 6 components have passed the specified criteria, with the component with the highest weight being MEM = 0.98, followed by EQA = 0.93, and the component with the lowest weight being CDM = 0.44. Therefore, it can be concluded that the quality of academic management of the English Program of bilingual schools in Bangkok has structural validity, consisting of 6 components as shown in Figure 1.

#### 4. Discussion and Conclusion

The results from this study meet the objectives. It has been found out that the components of academic administration quality in the English Program of bilingual schools in Bangkok have the structural consistency between theoretical data and empirical data. The statistical values passed all specified criteria. It consists of 6 components with weight between 0.44 and 0.98.

The component with the highest weight is the Measurement and Evaluation Management (MEM) because bilingual schools emphasize on the measurement and



evaluation of educational outcomes, which must be in accordance with the curriculum standards. Similarly, the study by Luersinghanart, (2009) found that the measurement and evaluation in bilingual schools had the highest average value, reflecting the necessity for educational institutions that teach bilingual languages to emphasize especially on the use of English, which is an important criterion as specified by the Ministry of Education in accordance with the curriculum standards of educational institutions (Chayasatit, 2020). Therefore, the measurement and evaluation must be carried out in different ways and with different standards consistent with the Office of the Basic Education Commission (2019) that set the criteria. Measurement and evaluation according to the internationally accepted language framework CEFR (Common European Framework Reference), which has classified language proficiency into 6 levels: A1, A2, B1, B2, C1, C2, as specified in the English language teaching guideline with 3 levels of intensiveness of international standards. Schools that teach bilinguals must design assessment and evaluation of students by creating tools or conducting assessments that are different from other education institutes in general, organize an empirical assessment of bilingual teaching that is aimed at students, develop and improve bilingual teaching (Noigor, 2019), change the paradigm in curriculum development and educational management, including measurement and evaluation with standards and indicators as goals (Singklieng, et al., 2022), supervise the curriculum, teaching, measurement and evaluation (Rangsai & Lenanant, 2018) to use the assessment results, which should consist of classroom assessments by teacher and school-level assessments, such as mid-term or final exams, and parent organization assessments, such as curriculum assessments or assessments of the quality of bilingual school management from the Office of Education or the Ministry of Education. including assessment at the international level, including language proficiency tests according to accepted criteria such as TOEIC, TOEFL, IELTS or CEFR proficiency tests (Office of Educational Innovation Development, 2005).

In addition, it has been found out that the component of the development of the internal quality assurance system (EQA) in educational institutions has the second highest weight. This may be because the Ministry of Education of Thailand has stipulated that all types of educational institutions under its jurisdiction must implement internal quality assurance by including this policy in law or a ministerial regulation, requiring educational institutions to establish educational management standards according to the context and type of educational institution at all levels systematically in accordance with the intention of the National Education Act, with a mechanism to control and inspect the educational quality management system that the educational institution

has set (Office of the Education Council, 2019). In particular, for bilingual schools, internal quality assurance is an important component in the operation and assessment of educational institution standards to improve quality and efficiency (Rangsai & Lenanant, 2018). All parties jointly study and create understanding of the details of national education standards and how they are consistent with the provision of education at their own levels (Office of the Education Council, 2022). At the end of each academic year, self-assessment must be conducted and a self-assessment report must be prepared and published to the public and reported to the parent organization (Ministry of Education Thailand, 2017). At the same time, when considering the educational standards and indicators in the assessment, it has been discovered that they are educational standards for all educational institutions. There is no specific characteristic for the assessment of bilingual schools, which is different from that of regular educational institutions (Sangkrot, 2020). Bilingual schools must be rigorous in assessment, which may create criteria that are in line with international standards. Educational institutions need to adapt by focusing more on international standards, aiming for the greatest benefit of learners (Sawetchochakul et al., 2019).

The component with the lowest value is Curriculum Development (CDM), which may be because bilingual schools clearly differ in their curriculum from other types of schools. A curriculum of bilingual schools is often developed in a specific way or using the curriculum from networks or prototype schools in the network. These curricula are immediately applied because they are specialized curricula that focus on the language outcomes that students will experience according to the specified criteria. As a result, bilingual schools often use curricula from international schools both in Thailand and overseas countries to manage education instead of developing or developing them by the educational institutions themselves. Finally, the results of this study also show that Teaching and Learning Management (TLM), Educational Supervision (ESM), and Development of Innovative Media and Educational Technology (MET) are also components of the quality of academic administration of the English Program curriculum of bilingual schools in Bangkok, as they have weights that pass the specified criteria.

Therefore, the results of this study have concluded that the components of academic management quality of the English Program of bilingual schools in Bangkok have the structural consistency between theoretical data and empirical data and pass the specified criteria. The components of academic management quality of the English Program of bilingual schools in Bangkok consist of 1) curriculum development (CDM), 2) teaching management (TLM), 3) educational measurement and evaluation (MEM), 4)

educational supervision (ESM), 5) development of innovative media and educational technology (MET), and 6) development of internal quality assurance system (EQA).

These findings can be important information for schools that offer bilingual education to use in designing, planning, and developing academic management systems in the English Program. The importance will be given to all 6 components found and the weights will be as arranged. This is because the data are tested by statistical values using the confirmatory factor analysis technique in the examination. It clearly shows that the theoretical data are consistent with the empirical data. All components have weights that pass the specified criteria.

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