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Analysis of the Integral Components and Indicators in Driving Organizational Transformation towards High Quality Basic Education Schools in Thailand

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Abstract

This study was designed to identify and examine the integral components and indicators in driving organizational transformation towards high-quality basic education schools under the Office of Basic Education in Thailand. The researchers employed a quantitative survey research design using questionnaire as an instrument. In preliminary study the researchers have conceptualized integral components and indicators using document analysis and verified by seven experts. This paper reported the survey of 520 respondents with the purpose of testing the goodness-of-fit of the high-quality basic education measurement model. The results showed that the measurement model was found to be consistent with empirical data.

Keywords: *Indicators, Integral Components, High-quality Basic Education, Organizational Transformation*

Introduction

A quality basic education school is defined as an organization that provides a high standard of education and effectively meets the needs of its students (Sulasmi & Akrims, 2023). Therefore, the concept of a quality school encompasses various integral components, such as building an effective team, building a joint developmental network, formulation of joint strategies, building a quality culture, and proactive communication. However, different stakeholders include educators, parents, students, and policymakers, may have varying perspectives on what constitutes a quality school (Sulasmi & Akrims, 2023). Fuller and Stevenson (2019) highlighted some key aspects typically associated with a quality school, namely academic excellence, student-centered approach, safe and supportive environment, effective leadership and governance, parent and community involvement, inclusive practices, continuous improvement, infrastructure and resources, and adaptability to change.

The definition of a quality school may vary across educational systems and cultural contexts, but these common aspects generally contribute to the overall understanding of what constitutes a high-quality basic education school. One of the key priorities and strategies of the 10th National Economic and Social Development Plan (NESDP) of Thailand is education and human resource development. This key priority and strategy include improving the quality of education at all levels and enhancing vocational training programs to address skill gaps in the labor market on achieving sustainable and balanced development across various sectors of the

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economy. Following this line of reasoning, transforming the quality of basic education involves a multifaceted approach that addresses various integral components within a school organization (Darling-Hammond, 2019). Darling-Hammond emphasized some key components in driving organizational transformation in the context of improving the quality of basic education.

According to Sahlberg and Cobbold (2021), leadership and governance, teacher quality and professional development, and curriculum and pedagogy are the integral components in driving organizational transformation towards high quality basic education schools. They highlighted the importance of strong and visionary leadership as an essential component for driving educational transformation. School leaders should have a clear vision for improving the quality of education and be committed to its realization. Moreover, school leaders should implement transparent and accountable governance structures to ensure that policies and initiatives align with the goal of enhancing basic education. Another integral component is teacher quality and professional development in driving organizational transformation, mentioned by Sahlberg and Cobbold (2021). This integral component includes two indicators, namely teacher training programs and recruitment and retention.

Continuous professional development for teachers is crucial to keep them updated with modern teaching methodologies and subject knowledge so that teachers can conduct quality teaching. Besides, attracting and retaining skilled and motivated teachers is vital for sustained improvement in education quality (Sahlberg & Cobbold, 2021). On top of that, Sahlberg and Cobbold (2021) emphasized the significance of curriculum and pedagogy in promoting quality education, for example relevant curriculum and innovative pedagogy. An up-to-date, relevant to students' needs, and aligned with international standards can significantly enhance the quality of education. On the other hand, teachers should be encouraged to use innovative and student-centered teaching methods to keep students engaged and foster a deeper understanding of the subjects.

Following this line of reasoning, organizational transformation in the realm of education is a complex process that requires a holistic approach, involving collaboration among various stakeholders, including policymakers, educators, parents, and the broader community (Sulasmi & Akrims, 2023). It is important to note that the effectiveness of the organizational transformational plan and the extent to which its objectives were achieved may vary. For the most up-to-date and detailed information on Thailand's economic and social development plans (NESDPs), including subsequent plans after the 10th NESDP, it is recommended to refer to official government publications, reports and announcements from reliable sources or contact relevant government agencies. The Thai national economic and social development plans are typically subject to adjustments based on changing circumstances and priorities.

Research Problems

While a school leader plans to drive his or her school organizational transformation towards high-quality education, it often comes with a set of challenges and complexities. Fullan (2021) highlighted some common problems that school leaders may encounter in the transformational process, namely resistance to change, lack of resources, and ineffective leadership. One of the most significant challenges is the resistance to change from various stakeholders, including teachers, staff, parents, and even students. These stakeholders are comfortable with existing practices and resist new methods or structural changes of their school organizational

transformation. Another problem is lack of resources such as inadequate financial, technological, or human resources that can hinder the implementation of transformative initiatives. This is because quality education often requires investments in teacher training, technology, infrastructure, and learning materials (Fullan, 2021). Nevertheless, ineffective leadership can impede organizational transformation. A lack of a clear vision, direction, and support from leadership can lead to confusion, inconsistency, and an inability to mobilize stakeholders.

Organizational transformation is a complex process that encounters various challenges. These challenges often stem from factors such as resistance to change, communication issues, leadership issues, and inadequate planning (Tang, 2019). For example, employees may resist the change due to fear of the unknown, perceived loss of job security, or discomfort with new ways of working. Moreover, the existing organizational culture may be resistant to change, making it difficult for new initiatives to take hold (Tang, 2019). This was supported by Fuller and Stevenson (2019) who stated that the success of educational transformation often relies on the continuous professional development of teachers. If there is a lack of opportunities, resources, or incentives for teachers to enhance their skills, it can hinder the implementation of quality education practices.

Literature Review and Conceptual Framework

Based on the above research problems had led the researchers to conceptual the predicted relationships between the six independent variables, namely building an effective team, building a joint developmental network, formulation of joint strategies, building a quality culture, practicing transformational leadership, and proactive communication joined together to appeal to coherent relationships in driving organizational transformation towards high quality basic education schools. Figure 1 displays the conceptual framework to justify the main objective of this research. This research was designed to explore the six components and their indicators that could be used by school leaders in driving their school organizational transformation towards high quality education. This was followed by testing the hypothesis that the identified components are related to each other in a way that is consistent with the proposed underlying factor structure. The conceptual framework was used as researchers' research process to map out how these six independent variables came together to draw coherent conclusions.

Building an effective team refers to the degree to which the goals of Thai education system are being achieved by teacher team and it is conventional to distinguish between internal and external effectiveness of the team (Barrett et al., 2006). External effectiveness of a teacher team refers to the degree to which the education system meets the needs of students and school stakeholders as a whole. On the other hand, the term internal effectiveness of teacher team is most properly applied to the functioning of schools and appears primarily in the vast literature on institutional effectiveness. Building a joint developmental network means a collaborative and interconnected approach to education, one potential interpretation could involve a holistic network that includes various stakeholders in the education system, such as teachers, parents, students, schools, and community organizations. This collaborative network could work together to support the overall development of students (Barrett et al., 2006).

Formulating joint strategies is a crucial component in promoting quality education, as it involves collaboration among various stakeholders to address diverse aspects of the Thai education system. For example, school leaders engage educators, administrators, policymakers,

parents, communities, and other relevant stakeholders in the formulation process. Furthermore, school leaders foster open communication and collaboration among these stakeholders to ensure diverse perspectives and expertise are considered (World Education Forum, 2000). Building a quality culture is another crucial component in cultivating quality education. A quality culture in education is defined as a shared set of values, beliefs, practices, and attitudes among all stakeholders that prioritize and contribute to the continuous improvement of educational outcomes (World Education Forum, 2000).

Proactive communication is a vital component in driving quality education. Effective communication facilitates collaboration, understanding, and engagement among all stakeholders in the education system (Tang, 2020). Proactive communication consists of clear expectations, transparency, feedback mechanism, engagement with parents, collaboration with teachers, community involvement, and alignment with educational goals (Tang, 2020). The final integral component in the field of education is practicing transformational leadership which can be instrumental in driving quality education. According to Prasertcharoensuk and Tang (2016), transformational leadership is a leadership style that emphasizes inspiration, motivation, and a focus on collective goals. Consequently, school leaders can create a dynamic and inspiring environment that fosters continuous improvement and drives the pursuit of quality education for all stakeholders by incorporating transformational leadership principles in their school administration practices. Figure 1 demonstrates the conceptual framework for this research.

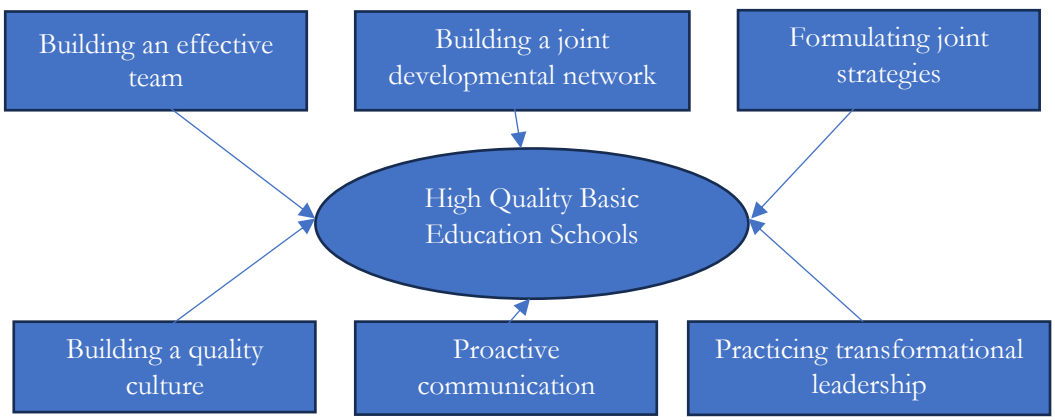

Figure 1. Conceptual Framework.

Research Methodology

Research Design and Research Process

The researchers began their study by conducting a survey primarily to examine the relationships between variables and test the theoretical high-quality of basic education model. The researchers planned to identify components and indicators of high-quality basic education derived from the document analysis and verified by seven experts in the preliminary study. Then, the researchers conceptualized the model by developing a theoretical framework that represents the components and indicators of high-quality basic education. The research framework (Figure 2) was based on the initial results from the preliminary study. Then, the researchers defined the latent constructs components) and their corresponding observed

indicators (refer to Figure 1).

A survey research design was employed for a more practical approach to collecting data from a large and diverse population. The researchers utilized an online survey to take up the bulk of surveying that was considered conclusive in its quantitative nature (Gay et al., 2009). In other words, this research design allowed us to pre-plan and structure in deign so that the data collected could be statistically inferred on the population. The researchers planned and considered various components to design a questionnaire to ensure that the collected data is reliable and relevant to our research objectives. Following this line of reasoning, a survey was constructed to test the structural construction between experimental examination and the hypothetical theory of quantitative relationships concerning experimental data. The relationships are epitomized by path coefficients or deterioration between the high-quality education components and their indicators. Figure 2 illustrates the research process. Quantitative data on the variables included in the model were collected using a questionnaire in order to capture data related to integral components in driving organizational transformation towards high-quality basic education schools. This was to make sure that the collected data would be aligned with the identified components and indicators.

This was then followed by the researchers constructed a measurement model that specifies the relationships between the latent constructs and their observed indicators. This procedure was used to make sure the selected indicators adequately measure their corresponding components. Once the measurement model was established, the researchers specified the relationships between the latent constructs. In short, the researchers determined the relationships between the components based on the theoretical framework. Hence, the structural model represents the causal relationships between the components of high-quality basic education (Hair et al., 2021).

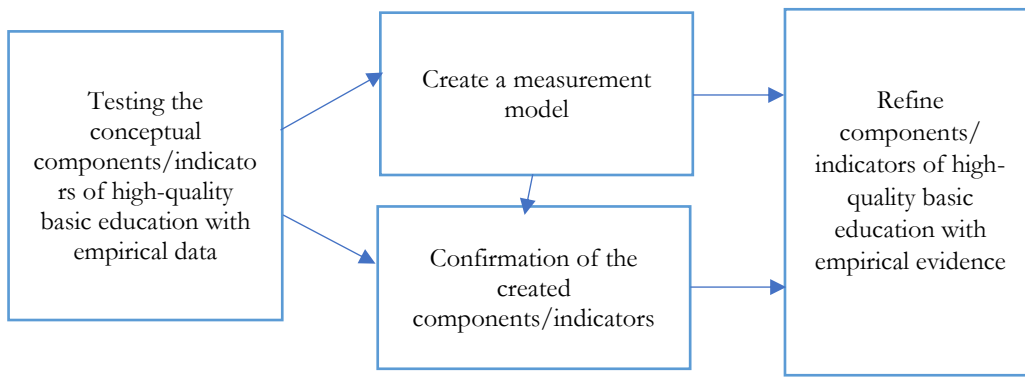

Figure 2. Research Framework.

Population and Samples

The target population of this research were school leaders and teachers who were working in 77 secondary schools that had been awarded as the High-Quality Schools under the administration of 61 Secondary Education Service Area Offices on July 25, 2022. A total of 4,004 target population comprised of 211 school leaders and 3,793 teachers. A multi-stage sampling method was employed as this sampling method is commonly used in large-scale survey in social research where it is not feasible to sample the entire population. This method helps balance the need for accuracy constraints such as time and resources (Gay et al., 2009).

The process typically involves breaking down the population into smaller more manageable groups, and then sampling from each of these groups in subsequent stages.

In the first level, the researchers randomly selected 61 Secondary Education Service Area Offices from the entire list of Secondary Education Service Area Offices in Thailand. This was followed by randomly select 77 secondary schools from within each chosen Secondary Education Service Area Offices. Finally, the researchers randomly selected six to eight respondents consistent with school size from each secondary school so as to make prime data gathering additional controllable (Gay et al., 2009). In order to articulate a sufficient sample size (N), the researchers applied Yamane's (1970) formula at a 95 percent confidence interval. Following this line of reasoning, the determination of sample size was computed in relation to the ratio of sample units to the parameter in composition analysis. In other words, the recognized sample size is accepted as the existence of categorized manner in obtaining a sufficient possibility for the required outcomes, namely statistical precision, model convergence, and statistical capability for specific confirmatory factor analysis (CFA) with experimental data (Hair et al., 2013).

Hair et al. (2013) used the ratio of parameters and samples as 20:1 to determine the required sample size. Since there was a total of 26 parameter in this research, the researchers managed to decide not less than 520 respondents as essential sample size. On top of that, this sample size fulfils the condition of at least 50 or not less than 100 using the ratio between the sample size and the factor analysis, for 10 to 20 parameters will be appropriate (Hair et al., 2013). In the final step of multistage sampling allowed the chosen 520 samples to be distributed into two sub-groupings, namely school leaders and teachers. Table 1 shows the distribution of population and sample groups.

Table 1: Distribution of Population and Sample Groups.

Region	Number of schools	Population		Samples		Total
		Leader	Teacher	Leader	Teacher	
North	18	53	898	7	117	124
Northeast	20	66	1250	8	162	170
Central	8	25	463	3	60	63
East	9	23	352	3	46	49
West	8	11	215	2	28	30
South	14	33	615	4	80	84
Total	77	211	3793	27	493	520

Research Instrument and Pilot Study

The survey questionnaire was used as an instrument and administered in the Thai language and consisting of two sections. There were 44 items including four demographic items and 40 items of high-quality basic education components and their indicators. The demographic items were intended to collect information pertaining to respondents' personal backgrounds including gender, educational level, job position, and working experience. On the other hand, the second section was designed specifically to gauge the perceptions of the 520 respondents on the high-quality basic education.

The questionnaire was undergone a validation testing by sending to five experts. Besides, validation on the validity of the instrument in terms of its content validity, it was also carried

out based on the index of the item according to objective congruence (IOC) which must be ≥ 0.6. The IOC scores indicated that all the 40 items were higher than 0.6 thus fulfilled the requirement. This was followed by the researchers made the necessary modifications to the original instrument based on the five experts' feedback. The revised questionnaire was then piloted to three school leaders and 30 teachers respectively to check for its reliability test. Since the Cronbach alpha value was 0.976, the questionnaire was reliable.

Data Analysis

The researchers employed descriptive statistics and Structural Equation Modelling (SEM) to analyze the quantitative data. The SEM is a statistical technique used to analyze the relationships between observed and latent variables. The researchers found this technique is suitable as it provides a comprehensive framework for testing and estimating complex relationships among variables. As a result, researchers used SEM technique to evaluate how closely a theoretical model fits an actual data set in order to test the hypothesized model (Hair et al., 2021). In other words, SEM is a combination of factor analysis and regression or path analysis. The interest of SEM often relates to the study of theoretical constructs which are represented by the latent factor. The relationships between the theoretical constructs are represented by regression or path coefficients between the factors. The structural equation model implies a structure for the covariance between the observed variables. SEM provides a very wide-ranging and appropriate framework for statistical analysis that includes several traditional multivariate procedures such as factor analysis, regression analysis, discriminate analysis, and canonical correlation as a special case. Structural equation models are often envisioned through the use of a graphical path diagram. The statistical model is usually exemplified in a set of matrix equations (Hair et al., 2021).

Mplus programme was used to analyse the relationship among the factor groups for research hypotheses within SEM which allows the model to be detailed graphically, by permitting the user to draw the path diagram directly in an interactive command window. Use of those analyses is consistent with previous leadership research (Tongkum et al., 2023). Confirmatory factor analysis (CFA) was used to examine correlations between latent variables and the observed variables and path analysis was used to examine the structural model (correlation between latent variables). Therefore, CFA is a commonly used statistical device for investigating the nature and relationships among latent constructs. CFA clearly tests a priori hypotheses about relationships between observed variables and latent variables or factors. CFA is part of SEM and plays a vital role in measurement model validation in path or structural analyses (Brown, 2006; MacCallum & Austin, 2000). Researchers assessed the measurement model as to whether or not the measured variables have accurately reflected the desired constructs or factors, before assessing the structural model.

The purpose of using SEM is to obtain estimates of the parameters of the model, includes the factor loading, the variances and covariance of the factor, and the residual error variances of the observed variables. On top of that, the researchers aimed to assess the fit of the model, for instance, assessing whether or not the model itself provides a good fit to the data. Absolute fit indices indicate how well a preceding model fits the sample data (McDonald and Ho, 2002) and establishes which proposed model has the best fit. These measures offer the most vigorous suggestion as to how well the proposed theory fits the data. Unlike incremental fit indices, its aim is not to rely on a comparison with a baseline model, but instead to measure how well the model fits in comparison to no model at all (Jöreskog & Sörbom, 1993). The variance-

covariance matrix was analysed using the maximum-likelihood estimation and using multiple indices of model fit including the Chi-Square statistic (χ^2), the Standardised root mean square residual (SRMR), the Comparative fit index (CFI), the Goodness-of-fit statistic (GFI), the Adjusted goodness-of-fit statistic (AGFI), Normed-fit index (NFI), the Tucker-Lewis index (TLI), and the Root mean square error of approximation (RMSEA) (Hair et al., 2021).

Result and Discussion

Identification of High-Quality Basic Education Components and Indicators

The results of preliminary study using document analysis revealed that there are six components and 20 indicators of high-quality basic education: (i) building an effective team component consists of three indicators, namely define clear goals and objectives, select the right team members, and establish roles and responsibilities; (ii) building a joint developmental network component comprises of four indicators, namely identify common developmental goals, select diverse participants, establish a clear purpose and structure, and create a collaborative environment; (iii) formulating joint strategies component encompasses two indicators, namely identify stakeholders and conduct a SWOT analysis; (iv) building a quality culture component includes four indicators, namely leadership commitment, define and communicate quality standards, continuous improvement, and employee involvement; (v) proactive communication component consists of three indicators, namely effective communication, proactive, and public relations, and (vi) practicing transformational leadership component comprises of four indicators, namely idealized influence, inspiring leadership, intellectual stimulation, and individualized consideration. In conclusion, the preliminary study results showed that there are 20 indicators derived from the six integral components with regard to fitting the Thai context. Table 2 demonstrates the details of the key components and indicators of high-quality basic education.

Table 2: Key Integral Components and Indicators of High-quality Basic Education in Thailand.

Key components	Indicators
Building an effective team	Define clear goals and objectives
	Select the right team members
	Establish roles and responsibilities
Building a joint developmental network	Identify common developmental goals
	Select diverse participants
	Establish a clear purpose and structure
	Create a collaborative environment
Formulating joint strategies	Identify stakeholders
	Conduct a SWOT analysis
Building a quality culture	Leadership commitment
	Define and communicate quality standards
	Continuous improvement
	Employee involvement
Proactive communication	Effective communication
	Proactive
	Public relations
Practicing transformational leadership	Idealized influence
	Inspiring leadership

	Intellectual stimulation
	Individualized consideration

Goodness of Fit of the High-Quality Basic Education Indicators with the Empirical Data

In this study, the researchers aimed to examine estimates of the parameters of the high-quality basic education model, the factor loading, and the validity of the observable components of high-quality basic education. Factor loading means the importance of standard indicators of each component in the high-quality basic education model that had been taken into account. Factor loading in the context of Confirmatory Factor Analysis (CFA) was used to analyze the standardized regression coefficients that represent the strength and direction of the relationships between observed variables (indicators) and latent components. Therefore, CFA was used by researchers to assess the high-quality basic education model and test the construct validity of a theoretical model. The factor loadings indicate how much of the variation in each observed variable is explained by the corresponding latent component. As a result, the higher magnitude of a factor loading indicates a stronger relationship between the latent component and observed variable as the magnitude of a factor loading ranges from 0 to 1. As shown in Table 3 below, the factor loading of all the high-quality basic education components ranged from 0.932 to 0.998, and statistically significant at 0.01. The researchers looked for values above a certain threshold, such as 0.3, to assess the significance of factor loading.

Following this line of reasoning, the results showed that the component with the highest factor loading was building an effective team component (β= 0.998) that supports how school administrators define clear goals and objectives, select the right team members and establish the team members' roles and responsibilities. This was followed by building a joint developmental network component (β= 0.983), formulating joint strategies component (β= 0.971), building a quality culture component (β= 0.968), and practicing transformational leadership component (β= 0.943). The component that had the least capacity in terms of factor loading was proactive communication component ((β= 0.932). Consequently, all the key components are found essential constructs in promoting high-quality basic education in Thailand.

On the other hand, covariance (R^2) is used to quantify the shared variance between observed variables and to estimate the factor loadings accurately. Moreover, the covariance structure is used to specified in the high-quality basic education model and the goal is to reproduce the observed covariance matrix based on the factor loadings. The results of the co-variance with the high-quality basic education components ranged from 86.90 to 99.50 percent. These results of the R-squared values determined the proportion of variance in the high-quality basic education that could be explained by the six components. The most significant predictor was building an effective team component (R^2 = 0.995). This was followed by building a joint developmental network (R^2 = 0.966) as second highest significant predictor (R^2 = 0.966). The third, fourth and fifth significant predictors were formulating joint strategies (R^2 = 0.944), building a quality culture (R^2 = 0.938), practicing transformational leadership (R^2 = 0.889), respectively. The lowest capacity predictor was proactive communication as an integral component in driving high-quality basic education (R^2 = 0.869). Therefore, the researchers concluded that the beta weight for the six predictors was the predicted difference in the outcome variable in standard units for a one standard deviation increase

on the given predictor holding the other five predictors constant in the respective model.

Table 3: Factor loading of High-quality Basic Education Components.

Components	Factor loading			Factor score coefficient FS	Prediction coefficient R^2
	β	S.E.	t		
Building an effective team	0.998	0.007	149.416	0.005	0.995
Building a joint developmental network	0.983	0.006	159.380	0.034	0.966
Formulating joint strategies	0.971	0.012	79.034	0.056	0.944
Building a quality culture	0.968	0.010	92.424	0.062	0.938
Practicing transformational leadership	0.943	0.011	77.952	0.111	0.889
Proactive communication	0.932	0.018	48.773	0.131	0.869

The researchers considered several fit indices of SEM to evaluate the goodness of fit in this high-quality basic education model to establish whether, overall, the model is acceptable. As a result, the researchers would typically compare the obtained values to commonly accepted threshold values to interpret the fit indices. Some widely used fit indices include the Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR) were used to provide information on how well the model fits the data, the degree of model misspecification, and the amount of unexplained variance.

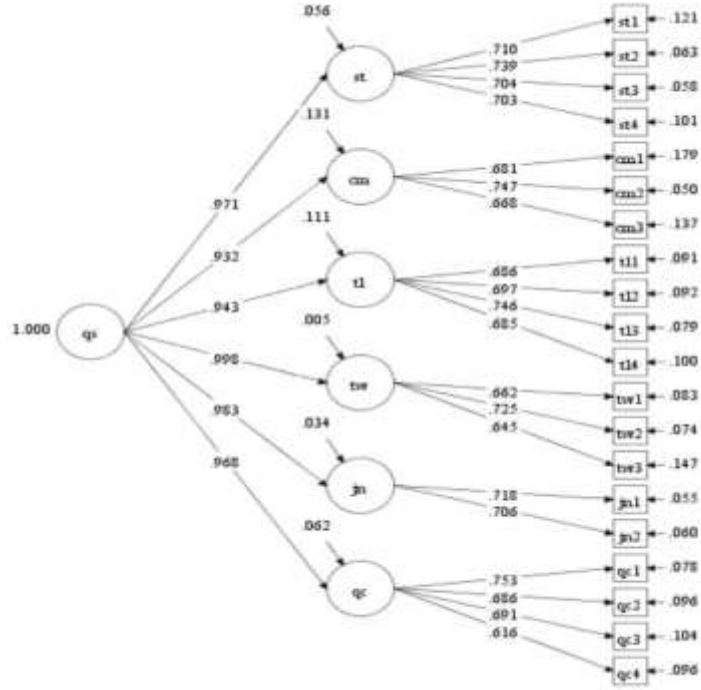

Figure 3. The Components and Indicators of High-Quality Basic Education.

The researchers took into account the following criterion for acceptance threshold values to interpret the fit indices. Firstly, CFI and TLI values greater than 0.90 or 0.95 indicate a reasonably good model fit (Diamantopoulos & Siguaw, 2000). Secondly, RMSEA values below 0.08 or 0.06 suggest an acceptable fit (Hu & Bentler, 1999). Finally, SRMR values below 0.08 are often considered indicative of a good fit (Byrne, 1998; Diamantopoulos & Siguaw, 2000). The quantitative result showed that the information ethics model has a goodness of fit with the obtained data of $\chi^2 = 89.880$, df = 73, $\chi^2/df = 1.2312$, *p*-value = 0.0875, RMSEA = 0.021, SRMR = 0.011, CFI = 0.999, TLI = 0.997. In conclusion, the high-quality basic education model agreed with the empirical data. Hence, the high-quality basic education model was accepted, and the researchers could establish whether specific paths were significant as elucidated in Figure 3.

Conclusion

The main result of this study is proposing and testing its goodness of fit by associating five integral components, namely an effective team component (β= 0.998), building a joint developmental network component (β= 0.983), formulating joint strategies component (β= 0.971), building a quality culture component (β= 0.968), practicing transformational leadership component (β= 0.943), and proactive communication component ((β= 0.932) in driving organization transformation toward high-quality basic education, in Thailand. This implies that regular monitoring of these six components and their indicators and using data to make informed decisions are critical for identifying successful strategies and areas that need attention. In conclusion, Ministry of Education, Thailand should focus on developed a skilled and adaptable workforce to support the transformation. This involves improving education and training programs to equip school administrators and teachers with the skills needed in driving

organizational transformation of high-quality basic education.

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