

# The Development of a Secondary School Health Assessment Model

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## Abstract

The objective of this research was to: 1) involved a survey of information relating to secondary school health, 2) involved the construction of a model of health assessment and a handbook for using the model in secondary school, 3) develop an assessment model for secondary school. The research included 3 phases. (1) involved a survey of information relating to secondary school health, which was performed by analyzing the approach and reviewing the related literature. The phase also involved synthesizing the factors associated with health in secondary school. (2) involved the construction of a model of health assessment and a handbook for using the model in secondary school. (3) the health assessment model for secondary school was applied to large, medium, and small schools to evaluate the model's validity. In addition, the assessment model was evaluated based on its utility, feasibility, propriety, and accuracy.

The research findings suggested the following:

- 1) The health assessment model for secondary school consisted of 4 major factors, 13 sub-factors, and 68 indicators.
- 2) The health assessment model for secondary school was deemed by experts to have content validity.
- 3) The health assessment model for secondary school was considered to have high levels of utility, feasibility, propriety, and accuracy. Considering each aspect, it was found that the aspects of utility, feasibility, propriety, and accuracy, were "High" for every aspect.

**Keywords:** model development, health assessment model for secondary school

## 1. Introduction

Current high school No forms to assess the health of the school. The researchers are interested in developing an assessment model for secondary school.

School Healthy was a school implementation climate as a concept which could explain the important variables I measuring the school effectiveness. The study of Health or Organizational Health in school level based on Hoy et al. (1991) statement that the school healthy was the working situation according to necessary responsibility of school in Institution Level, Management Level, and Technical Level as perceived by the administrators and teachers. The Organization worked in all of 3 levels as: 1) the Institution Level, 2) the Management Level, and 3) the Technical Level with coordination being able to express the need to cause the school to be successful. In the study of Organizational Healthy of Mile (1965), it was stated that if one want to compare the organization or school as human body, it could be considered from situation of school work practice, and working by various systems inside the body including many systems. Each organ was responsible for itself if the organs or systems could be able to work efficiently.

Therefore, the organizational assessment was revision of responsibility and development of the whole system of work practice which could follow up and investigate performance occurred by using technique and method in organizational development. In addition, it was a mechanism stimulating the working by staffs in organization as well. It was necessary for the assessment to determine the assessment implementation plan in advance. In this way, the evaluator would determine it as a guideline for assessment. If the organization was viewed in a complex system including important variables as the organizational structure, people and society, work and activity, and technology. These variables had to be related with organizational goal as a major direction leading to success. So,

the organization had to improve throughout the time in order to keep pace with the continuous changes of environmental condition or incidence (Bhuddaprasert, 1999).

Nowadays, the organizational assessment was accepted in various organizations of Thailand including both of public sector, and private sector as the rationale or approach of management for a long time, a responsibility of administrators. But, after self-assessment of organization based on assessment criterion, the organization would specify its strong point as well as opportunity to improve itself for ranking the order of significance in organizational improvement (The Office of Official System Development (OSD), 2007, p. 4). Hoy and Feldman (1987, p. 32) developed instrument for measuring the Educational Organizational Health consisted of a dimension indicated 7 aspects of Organizational Health including: Dimension 1; the strength of institution, Dimension 2; the head teacher's influence, Dimension 3; human-oriented management, and Dimension 4; work oriented management, Dimension 5; resource support, Dimension 6; teacher's morale, and Dimension 7; academic oriented. Furthermore, Clark and Falirman (1983) developed A Guide for Examining Level of Organizational Health, and instrument using to find level of Organization Health including the statements specified details of 10 variables using for measuring as: the goal accomplishment, communication adequacy, appropriate power use, appropriate resource use, unity, morale, innovation, independence, adjustment, problem solving ability. The scoring was determined as 3 levels of score from Low, Moderate, and High.

In the meanwhile, Owens (1991) stated that the organization would be healthy by practicing to accomplish 10 criteria as follows: 1) Goal Focus, the persons in organization had to understand as well as accept Organizational Goal which needed to be possible and suitable with environment, 2) Communication Adequacy, the organization had to provide efficient communication both of inside and outside the organization including data being ready for diagnosing as well as solving the problem which affected Organizational Development, 3) the Optimal Power Equalization, the organization decentralized appropriately and fairly in every organization, 4) Resource Utilization was to use the resource efficiently for instance, Human Resource should be assigned work adequately with lower level of tension, the staffs worked hard without feeling of overload working, they were satisfied in how to behave as well as expected role of organization, they had their own knowledge, they did not only have good feeling towards their work but also knew that their organization supported them to learn and make progress, 5) Cohesiveness was to have unity and support with each other, and wanted to be exist in organization by paying respect with each other, 6) Morale was one's feeling in mind since the staffs had good feeling towards organization as well as satisfaction which was contrary to unhappiness, tension, and unsatisfactory with organization, 7) Innovativeness was the advancement and changes in organization, new goal thinking as well as product, self-changing instead of being the same, 8) Autonomy was one's independence or autonomy with freedom to serve the need of environment, 9) Adaptation was one's ability to adjust oneself quickly, firmness on stress caused by difficulty from unhealthy adjustment, 10) Problem-Solving was one's ability to solve problem efficiently by using resource and feeling stressful least.

## 2. Literature Review

Research and Development of Health Assessment Model in Secondary School, the researcher studied rationale, approach, and related research literature. The conclusions and analysis were performed to synthesize into conceptual framework covering the following issues:

### 2.1 Model Development

Sri-sa-ad (2004) stated the steps of Model Development that it consisted of 2 steps. The first step, the researcher would construct or develop the model as Model based on hypothesis by studying theory, approach, and findings of related literature as well as analyzing various issues.

Willer (1986) stated that there might be different models of implementation step in model development. In general, it might be classified into 2 major steps as the Model Construction, and Validation.

The Model and Development consisted of following steps:

- The study of related body of knowledge was performed by studying document and related literature in order to use the findings in determining conceptual framework, and outlining the model.
- The Reliability of the model was found by investigating the congruence of content material based on specified factors.
- The model was tried out in real situation.
- The developed model was evaluated.

The idea for the creation or development of a model to assess Nevo (1983) has proposed the development of a

model based on 10 questions, the main question is this.

Question 1: Evaluation Definition; In this question, the developed evaluation model to define the form and answer the questions that the evaluation model that focuses on value judgments or to assess for improvement and development.

Question 2: Evaluation Goal; to evaluate it. Aims and criteria to be used to judge the results. Thus, in the form of assessment that aims to answer the question, how and what criteria to judge what is estimated to achieve a goal or not.

Question 3: Evaluation Role, Summative Evaluation or Formative Evaluation.

Question 4: Evaluation Object; This question is important in the development of forms of assessment. Because the development of a model to study what would be understood by a thorough evaluation to determine how to assess it. And how to analyze the information.

Question 5: Evaluation Audiences; in question. Identify those who want to use information from the assessment that the group does. It must be clear from the beginning.

Question 6: Evaluation Information; indicate that this question needs to be evaluated to what information. Depending on the definition of the valuation of those that need to be defined by only one from scratch.

Question 7: Evaluation Design; considered that the assessment should be. By specifying the details of the assessment activities, and so on.

Question 8: Evaluation Procedure; must answer to this question is obvious. To evaluate the model developed using techniques or methods may be appropriate, and the information of the evaluation as well.

Question 9: Evaluation Criteria; Standard evaluation criteria are used to decide who is recognized by the Professional Assessment. Therefore, the development of the evaluation must answer to that using any standard to judge the results.

Question 10: Evaluator; indicates that those who will serve as the. Who assesses and how qualifications.

## *2.2 The Assessment*

Kanjanawasi (2007) stated the theory of criterion for assessment that it was to judge the external value in one aspect or many aspects of what to be evaluated including the context evaluation, basic factor, process or product. The evaluator could be able to perform by concluding the inference from the observable object based on indicator in order to compare with appropriate criterion by selecting its standard criterion (absolute criterion) or criterion from comparison with former project or the other similar ones (relative criterion). In selecting appropriate criterion for judging to cover the value in aspect to be evaluated for the most benefit for developing the value of that thing. The evaluators had to consider the significance of context as well as focus of assessment during the stage of evaluation.

## *2.3 The Approach of School Health*

Hoy and Miskel (1987) explained that the Organization Health of School was a conceptual framework for explaining the school climate. If the school was a Healthy School, it would be free from pressure of society, community and parents, administrators with leadership which could be changed throughout the time focusing on both work-oriented as well as affiliation-oriented health, supporting their sub-ordinates, leading and high standard of work practice, influence of their sub-ordinates including action as well as thought, the school teachers were healthy being affiliated with learning and teaching, setting high and practical instructional standard, the students had to work hard in studying as well as have high motivation in studying as well as accept their friends' high learning achievement, sufficient instructional media and equipment, the teachers were sincere with each other as well as active in work practice, and proud of their institution.

Hoy and Feldman quoted in Hoy, Tarter, and Kamp (1991) applied the approach of Social System Theory as a basic conceptual framework for explaining the analysis of natural working condition of organization or being the study in Organizational Climate in another aspect. It was congruent with statement of Brookover and other (1978) that the School Health was a working condition based on necessary responsibility of school in the institutional level, management level, and technical level. Hoy and Other and Hoy, Tarter, and Kamp (1991) stated their opinion that the School Health was the working condition according to necessary responsibility of school in the institutional level, management level, and technical level based on perception of administrators and teachers. If a school was organizational healthy, it meant that the school consisted of all 3 levels of work as: 1) the institutional level, 2) management level, and 3) technical level associated with each other indicating the need for school

success without tension from outside very well.

In the meanwhile, Owens (1991) stated that the organization would be healthy by practicing to accomplish 10 criteria as follows: 1) Goal Focus, 2) Communication Adequacy, 3) the Optimal Power Equalization, 4) Resource Utilization, 5) Cohesiveness, 6) Morale, 7) Innovativeness, 8) Autonomy, 9) Adaptation, 10) Problem-Solving.

### 3. Research Methodology

In this study, the purposes were: 1) to study the Factors and indicators of Health in Secondary School, 2) to develop the Healthy Assessment Model in Secondary School, and 3) to evaluate the usage of Health Assessment Model.

This study aimed to develop the Healthy Assessment Model in Secondary School to accomplish research objective. The researcher established 3 Phases of research methodology as follows:

Phase 1: The analysis and synthesis of the approach relating to Healthy in Secondary School were performed.

Phase 2: The construction of Model, establishment of Handbook in usage of Healthy Assessment in School, and assessment of Health Assessment Model in Secondary School, were performed.

Phase 3: The Healthy Assessment Model of Secondary School was tried out and evaluated. The research steps were shown in Figure 1.

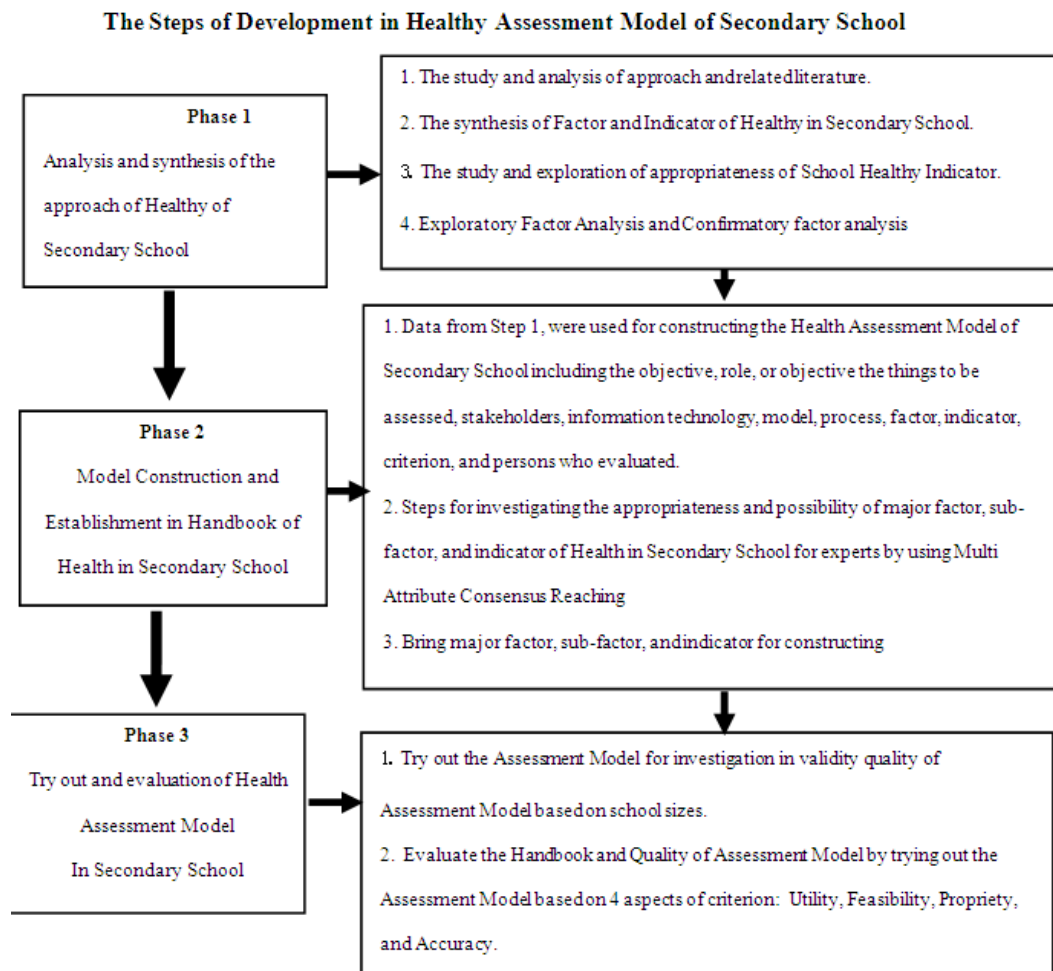


Figure 1. Phase of research implementation

Phase 1: The study and survey of information related to School Healthy

1) The approaches of Healthy Organization were synthesized in order to obtain the factors of Healthy Assessment in Secondary School, and Indicator of Healthy in Secondary School.

2) The Model of Healthy Organization was synthesized to obtain factor of Healthy Assessment in Secondary School, and Indicator of Healthy in Secondary School.

3) The Criterion of Healthy Assessment in Secondary School, studied from the approach of Nevo (1983) by using 10 major questions consisted of major factors in tentative assessment model including: the definition, goal, role or objective, what to be assessed, stakeholder, information technology, model, process, factor, indicator, criterion, and evaluator.

To obtain information technology of Health Assessment Model in Secondary School, the major steps were as follows:

- The approach and related theory were studied and analyzed.
- The factor and indicator of Healthy in Secondary School were synthesized.
- The appropriateness of indicator in School Healthy. The samples using for data collection, were the school administrators, acting head of Learning Substance, and teachers in Secondary School, under jurisdiction of the Office of Secondary Educational Area, North Eastern Region, 2012 school year. The sample size was determined based on population, 20% of them. The samples were 187 schools including 81 extra large sized schools, 89 large sized schools. The extra large sized school, and large sized school were classified in the same group by the researcher. There were 34 large sized schools, 75 medium sized schools, and 78 small sized schools, total number of samples included 561 persons.

4) Data from the survey were conducted the Exploratory Factor Analysis. Data from the study and survey were analyzed factor of Healthy in Secondary School, and indicator of Healthy in Secondary School. The EFA was performed by using Computer Program including 4 steps as: 1) the preparation of Correlation Matrix, 2) the screening of basic factor, 3) the varimax technique, and 4) the construction of factor or scale variables.

5) The Confirmatory factor analysis, was performed for testing the congruence of research model, and empirical data, the construction of sub-factor scale through the Confirmatory factor analysis and second-order confirmatory factor analysis, were performed by using: chi-square statistics, GFI: Goodness-of Fit Index, AGFI: Adjusted Goodness-of Fit Index and RMSEA: Root Mean square Error of Approximation by using the Amos Program after the Exploratory Factor Analysis: EFA) The samples were 561 persons by analyzing the model based on empirical data by using criterion of congruence testing as Table 1:

Table 1. Criterion for evaluating congruence with empirical model

Evaluating the Data-Model Fit	Criteria	Considering
1) CMIN-p (probability level of Chi-square). Chi-Square Probability Level	$p > 0.05$	p value had to be more than 0.05 the more p value, the better it would be
2) CMIN/df (relative Chi-square) Relative Chi-Square	$< 3$	CMIN/df value had to be less than 3 CMIN/df approaching 0, the better it would be
3) GFI (index value of congruence level) Goodness of Fit Index	$> 0.90$	GFI value had to be more than 0.90 GFI value approaching 1, the better it would be
4) RMSEA (root index level of square of error estimation) Root Mean Square Error of Approximation	$< 0.08$	RMSEA value had to be less than 0.08 RMSEA value approaching 0, the better it would be

Phase 2: Model Construction, Establishment of Handbook for using the Healthy Assessment Model in Secondary School.

In Phase 2, it was focused on construction and development of Assessment Model, and Handbook for using the Healthy Assessment Model in Secondary School.

1) The obtained information technology from Phase 1, was constructed the Nevo's Healthy Assessment Model (1983) using 10 major questions. The major factor of tentative Assessment Model consisted of the definition, goal, role or objective, the object to be evaluated, stakeholder, information technology, model, process, factor, indicator, criterion, and evaluator.

2) The appropriateness and possibility of tentative Assessment Model, major factor, sub-factor, and indicator of Healthy in Secondary School, were investigated. The researcher applied Multi Attribute Consensus Reaching, the details of implementation were as follows:

- The open-ended Questionnaire was constructed by using information technology obtained from Phase 1, into the Questionnaire including major substance material as: the tentative Assessment Model, major factor, sub-factor, and indicator of Healthy in Secondary School. In the process of Multi Attribute Consensus Reaching, it was 5 Level Rating Scale for evaluating the appropriateness as well as possibility of tentative Model, major factor, sub-factor, and indicator of Healthy in Secondary School.
- The developed Questionnaire was presented to 9 experts who would
- attend the Multi Attribute Consensus Reaching, being assigned into 3 small groups, 3 persons each group including: the experts in administration, the expert in measurement and evaluation, and the expert as representative from Secondary School to investigate the appropriateness and possibility of tentative Assessment Model, major factor, sub-factor, and indicator of Healthy in Secondary School. The returned Questionnaires were analyzed the Median: Mdn, Inter-quartile Rang: IQR), and different testing of score in opinion among 3 groups of experts in each item of evaluative findings by using testing statistic as The Kruskal-Wallis Test (One-way Analysis of Variance).
- The researcher provided Feedback for the experts before the Multi Attribute Consensus Reaching, for presenting the information technology to all 3 groups of experts regarding to the items with consensus, and no consensus.
- The Multi Attribute Consensus Reaching was held according to the specified date and time, and place by discussion of experts for consensus in the issues and items with no consensus.
- The experts were classified into 3 groups, 3 experts each group, based on characteristic of the experts. The researcher provided findings information responding in the first Round 1, as the feedback for each group. Then, the experts from each small group attended the conference and discussed the conclusions of congruence in the issues with no congruence.
- The researcher concluded the discussions and collected recommendations from the experts. Later on, the obtained information technology to improve and develop the Assessment Model to be more perfect.

1) The construction of Handbook of Healthy Assessment in secondary School, the researcher implemented by determining the objective in establishing the Handbook of assessment by studying approach and rationale of assessment to be guidelines for constructing the Handbook and Healthy Assessment of school including the following components: rationale and reason, objective of assessment, goal of assessment, operation definition, assessment model, step of assessment, factor of assessment, factor and indicator of School Healthy, criterion of assessment, and guideline for applying the evaluative findings.

2) The researcher presented the Handbook of Healthy Assessment to thesis advisor to consider, improve, and correct to be more complete.

Phase 3: The Assessment Model was tried out, and the Healthy Assessment Model in Secondary School, was evaluated.

For Part 3, the Healthy Assessment Model in Secondary School was tried out. The Handbook of usage in the Healthy Assessment Model of school in real situation including the following steps as shown in Figure 2.

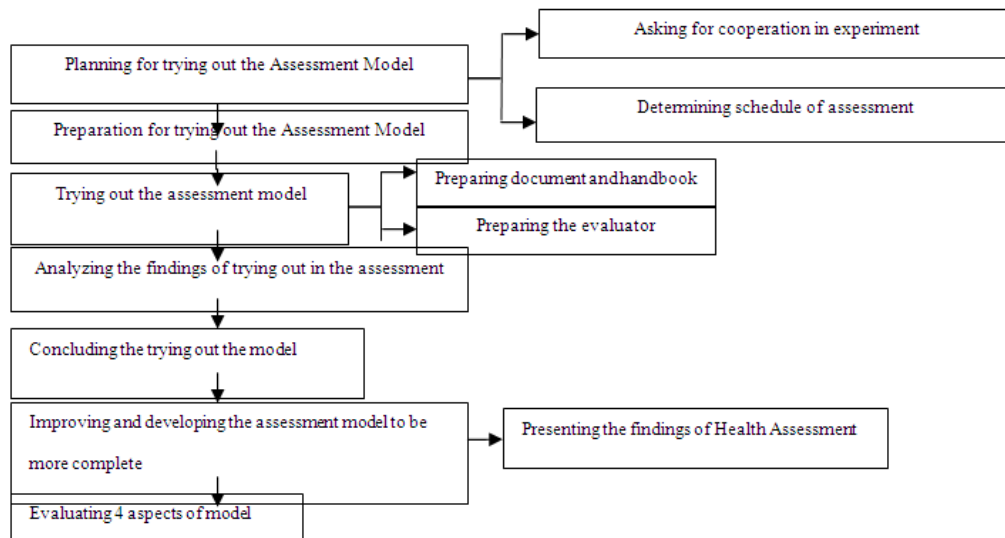


Figure 2. Steps of trying out the assessment model

According to Figure 2, the details for implementation were as follows:

1) Trying out of Assessment Model and Evaluation of Assessment Model

a) Planning for trying out the Assessment Model

- Planning for trying out the Assessment Model by selecting 3 schools including the large sized school, and small sized school, selected by Purposive Sampling.
- Asking for cooperation in trying out the Healthy assessment Model in 3 Secondary Schools as the area for trying the Healthy Assessment Model of Secondary School.
- The researcher determined schedule for trying out the Healthy assessment Model in Secondary School.

b) The preparation for trying out the Assessment Model

- The researcher prepares document using for Assessment and handbook of Assessment Model to be complete.
- The informed the details in assessment for evaluators of school Healthy during the conference so that they would have knowledge and comprehension in objective and factor of Healthy Assessment in school, indicator of School Healthy, criterion for Healthy Assessment of school, and technique of Healthy Assessment in school for evaluators to be ready for the assessment most.

c) The evaluator team implemented the Healthy Assessment of school according to schedule. The researcher helped and observes the assessment of evaluator team, and provided support for related persons in providing information.

d) The analysis of findings from trying out of Healthy Assessment Model in Secondary School.

- The researcher and evaluator team collaborated in analyzing the assessment findings in School Healthy in order to be information technology for the administrator in school administration further.
- The researcher analyzed the findings from School Healthy Assessment based on the developed Assessment Model of Secondary School.

e) The researcher concluded the findings in trying out the Assessment Model and reporting the practice findings for related persons.

f) The assessment of Healthy Assessment Model in Secondary School after using the Healthy Assessment Model of secondary School in real situation in order to evaluate the extent to which the possibility, appropriateness, correctness as well as usefulness for evaluating the Healthy assessment of Secondary School, the researcher implemented as follows:

- Set up the objective of assessment model to check was tried out and evaluated to investigate the Validity of

Health Assessment Model based on school context.

- Develop the instrument using for evaluating the Assessment Model based on standard in 4 aspects including: the Utility of Standard, Feasibility of Standard, the Propriety of Standard, and Accuracy of Standard.
- Evaluate the Assessment Model by the evaluators of Assessment Model as the related persons in trying out the Assessment Model.
- Analyze the findings of Assessment Model.
- Use the findings from Assessment Model, for improving and developing the Assessment Model to be more complete.

2) The key informants

a) The informants consisted of the administrators, chief of working group, teachers and related Educational staffs with the factor and indicator.

b) The informants of Model Assessment and Handbook of Healthy Assessment Model in Secondary School who involved in using the Healthy assessment Model of Secondary School, provided information after using the Healthy Assessment Model of Secondary School.

3) The instruments using for trying out and evaluating the Assessment Model.

a) The instruments using for trying out the Assessment Model, was a Handbook of Healthy Assessment in Secondary School.

b) The instrument using for evaluating the Assessment Model of secondary School, used to evaluate the Utility of Standard, Feasibility of Standard, the Propriety of Standard, and Accuracy of Standard. It was 5 Level Rating Scale as: 5 = the highest level, 4 = high level, 3 = moderate level, 2 = low level, and 1 = the lowest level.

4) The construction of instrument using in data collection.

a) The researcher implemented by using the handbook of Assessment Model in Secondary School developed based on framework of related theories with school Healthy.

b) The researcher constructed the assessment Model, the Handbook of Healthy Assessment Model based on 4 aspects of standard criterion which was applied from Standards for Program Evaluation developed by Standard Criterion Development of Educational Assessment Committee. (Stufflebeam & Shinkfield, 2007, pp. 87-92; cited in The Joint Committee on Standards for Educational Evaluation, 1994) including the Utility Standard, Feasibility Standard, Propriety Standard, and accuracy Standard. The instrument using for data collection, was 5 Level Rating Scale including 3 Parts: General Information, the opinion on Healthy Assessment Model of school, and the supplementary viewpoint/ suggestions.

c) The developed model was presented to thesis advisor for investigating and suggesting. Then, it was improved and revised to be more appropriate.

#### 4. Results and Discussions

Phase 1: The findings of study and survey of information related to Healthy Assessment of Secondary School.

In Phase 1, the researcher studied and surveyed the information related to Healthy Assessment of Secondary School in sequence as follows:

I) The findings and analysis of theoretical approach and related literature as important part of the Assessment Model from the study of approach, theory, and content relating to the School Healthy Assessment, evaluation, and others. The researcher analyzed and synthesized for determining conceptual framework of Healthy Assessment in School especially the factor of assessment in order to obtain information technology as important parts of Healthy Assessment Model of School as follows: 1. The organizational aspect consisted of 12 sub-factors, 1.1 the organizational structure and system, 1.2 the goal setting of Healthy school, 1.3 the policy, 1.4 organizational development, 1.5 participation, 1.6 unity, 1.7 organizational freedom, 1.8 organizational strength, 1.9 curriculum, 1.10 communication in school, 1.11 organizational prestige, and 1.12 organizational culture, 2. The administrator factor, consisted of 5 sub-factors including: 3.1 the teacher's characteristic, 3.2 morale, 3.3 team working, 3.4 innovation use, 3.5 academic oriented, and 4. The environmental factor consisted of 3 sub-factors including: 4.1 the physical environment, 4.2 academic environment, and 4.3 administrative environment.

II) The findings from survey of Propriety of Healthy indicator of Secondary School, found that the appropriateness was in "High" level in every indicator. Then, the researcher used the surveyed data for



Exploratory Factor Analysis in indicator of Secondary School Healthy, found that the School Healthy included 4 major factors, 25 sub-factors, 101 indicators as follows: 1) the major factor of organization, 12 sub-factors, 37 indicators, 2) the major factor of administrator included 5 sub-factors, and 18 indicators, 3) the major factor of teachers included 5 sub-factors, 16 indicators, and 4) the major factor of environment included 3 sub-factors as: 4.1 physical environment, 4.2 academic environment, and 4.3 administrative environment.

III) The findings from Confirmatory Factor Analysis (CFA), the analysis of measurement model in Healthy Indicator of Secondary School, the researcher used information from Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA) by Amos Program, the Confirmatory Factor Analysis (CFA) of Observed Variable as shown in Table 2, and Figure 3.

Table 2. The findings of confirmatory factor analysis of total healthy indicator in secondary school healthy

Variable	Factor Loading		Significant	R <sup>2</sup>
	b(SE)	$\beta$		
The Second-order Factor Analysis of Healthy in Secondary School				
Goal	.000	1.000	***	.896
Cul	.891	.891	***	.832
St	.030	1.022	***	.936
Ls	.000	1.000	***	.896
In	.029	.912	***	.903
Re	.033	.964	***	.887
Ab	.030	.989	***	.913
Inn	.000	1.000	***	.864
Qua	.034	.864	***	.891
Pos	.049	.870	***	.670
Ea	.000	1.000	***	.878
Ep	.046	.906	***	.727
Ead	.039	1.111	***	.906
At	.048	.240	***	.258
$\chi^2 = 33.933$ df = 47 P-Value = .923 RMSEA = .000				
GFI = .991 AGFI = .979 NFI = .995 CFI = 1.000				

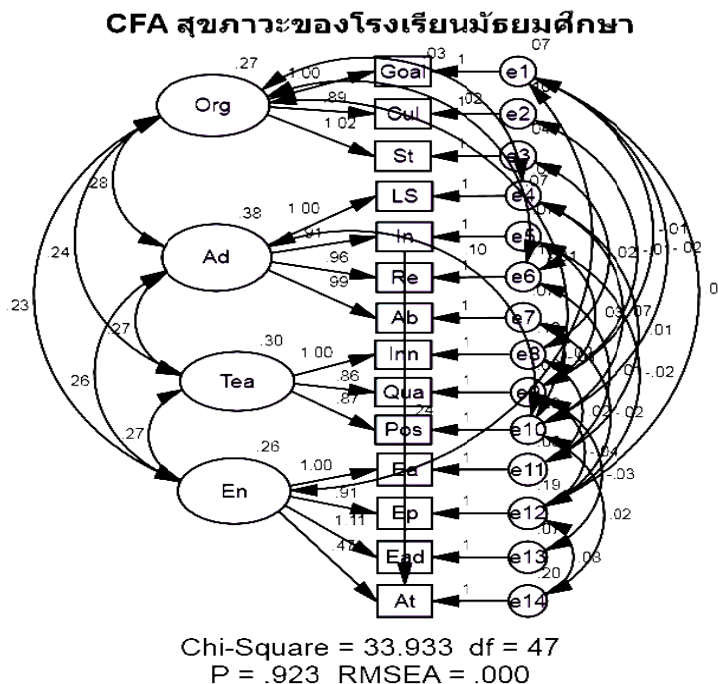


Figure 3. Confirmatory factor analysis of total indicator in secondary school

According to Table 2 and Figure 3, the findings of Confirmatory Factor Analysis by using Amos Program, indicated that the Measurement Model was congruent with empirical data considering from: 1) Chi-square value was no significant differences from zero, and/or the Chi-square divided by df, was less than or equal to 2. (Soopamad Angsuchote, 2008, 25-26) In this case, the Chi-square was 33.933 at df = 47, and P-value was 0.923, and P-value = .923 (not significant), and Chi-square divided by df = .721, 2) GFI Goodness of Fit Index = .991, and the AGFI; Adjusted Goodness of Fit Index = .979 (In this study, using the value of GFI > 0.90, and the value of AGFI > 0.90, 3) RMSEA value (Root Mean Square Error of Approximation = .000 (RMSEA < 0.50) indicated that the model was congruent with empirical data.

The Sub-factor 1: the Goal setting of Healthy school consisted of 7 indicators as:

- 1) The school established policy continuously for achievement.
- 2) The school established precise policy for teacher development focusing on developing the teachers' skill and competency continuously,
- 3) The school established precise policy to serve the students' needs,
- 4) The school planned for the Educational Administration and Management by community cooperation,
- 5) The school had freedom in school curriculum management,
- 6) The school emphasized on instructional development by the teachers participated in learning community of teaching profession, and
- 7) The school board played an important role in school administration and management.

The Sub-factor 2: the Organizational Culture consisted of 6 indicators as:

- 1) The teachers and Educational staffs in school had climate of shared learning in various aspects,
- 2) The school had friendly and supportive climate,
- 3) The school had climate enhancing the team work being responsible based on one's role,
- 4) Everyone on school had participation,
- 5) The school had systematic and efficient communication, and
- 6) The administrators, teachers, Educational Staffs, parents, and students collaborated in maintaining the school honor and reputation.

The Sub-factor 3: the Organizational Structure and System consisted of 4 indicators as: 1) The school established the structure and work systems focusing on decentralization by participation, 2) The school established the work structure and system focusing on the model facilitating work, 3) The school set precise goal of school development, and 4) The school decentralized enhancing the empowerment.

The Sub-factor 4: the Leadership consisted of 5 indicators as: 1) The administrators administered Participatory Management, 2) The administrators empowered the school teachers and Educational Staffs in working, 3) The administrators had assessment system in work performance of teachers and Educational Staffs fairly, 4) The school accepted the teachers' opinion, and 5) The administrators empowered the teachers to be able to control

and make decision in working.

The Sub-factor 5: the school administrators' influence consisted of 3 indicators as: 1) the administrators were recognized from both of inside, and outside school, 2) They were able to work with their super-ordinates, and ne role model, and 3. They were able to work with their sub-ordinates.

The Sub-factor 6: Resource Support consisted of 4 indicators as: 1) The administrators had policy in spending budget being worthwhile by considering utility, 2) They enhanced the Educational Staffs to use resource efficiently, 3) They supported resource for teachers and Educational Staffs based on the assigned power and duty, and 4) They enhanced the students to see value of resource.

The Sub-factor 7: Problem Solving Ability consisted of 3 indicators as: 1) The administrators problem solving appropriately, 2) They were able to solve problems with every related division from both of inside and outside school, and 3) They collaborated in finding the guidelines for solving the problem in order not to be obstacle for working.

The Sub-factor 8: Innovation consisted of 3 indicators as: 1) The teachers administered the innovation in learning activity management as student-centered, 2) They applied local wisdom in Educational Management, and 3) They produced and developed the innovation in learning and teaching.

The Sub-factor 9: Teachers' Characteristic consisted of 5 indicators as: 1) The teachers had vision and leadership in working together, 2) They had virtue and morality, 3) They had knowledge and professional expertise, 4) They had systematic thinking process associating with their work, and 5) They searched for knowledge for improving their existed knowledge and self-development.

The Sub-factor 10: Morale consisted of 4 indicators as: 1) The teachers cooperated in making decision or planning their work, 2) They trusted and honored each other, 3) They were recognized and rewarded fairly, and 4) They had positive attitude towards their co-workers when they succeeded in their work practice.

The Sub-factor 11: Academic Environment consisted of 6 indicators as: 1) The school had various learning sources enhancing the students' learning, 2) The school organized various instructional management enhancing the students to be developed based on their competency appropriately with the students' nature and needs, 3) The teachers organized the instructional activities by considering individual differences, 4) They paid attention to every student thoroughly, and 5) The school disseminated its success as well as academic competency for outsiders and outside work unit, and 6) The school provided sufficient bulletin board both of inside classroom, and school area.

The Sub-factor 12: Physical Environment and School Climate consisted of 13 indicators as: 1) The school organized clean, peaceful, fresh, beautiful, and lively scenery, 2) The school provided the resting area for teachers and students, 3) The school had good system for eliminating garbage, 4) The school Healthy and sufficient restroom and toilet, 5) The school included the school had clean and healthy cafeteria, 6) The school had clean and safe road and foot path inside school, 7) There were sufficient buildings for work in school, 8) There were sufficient and clean classroom, building, and laboratory with adequate ventilation and light, 9) There were sufficient and available material, hardware, and equipment in school, 10) There was good public utility, 11) There were sufficient sport field and exercise area, 12) The location of school was far away from pollution as well as outside disturbance such as polluted water, loud noise, factory, and 13. The school was safe and tidy.

The Sub-factor 13: Administration and Management Environment, consisted of 5 indicators as: 1) The school had transparent administration in every step which could be explained and understood by related persons, 2) The school provided the activities enhancing relationship among school staffs were provided in school regularly, 3) The school cooperated with community as well as was supported by outside work unit, 4) There was good and efficient communication system, and 5. There was correct information and news service which was available to be used.

IV) The criterion for evaluation was the determination to judge: what level the specified indicator in school Healthy of each factor would be? By determining 4 levels of criterion for school Healthy assessment as: Excellence included score from 80% up, Good level included score 70-75%, Moderate Level included the score 60-69%, and the Improved Level included the score 1-59%.

V) The findings of constructing the Assessment Model, and Handbook of Healthy assessment in Secondary School, the researcher synthesized tentative model of Assessment, to present the experts in process of assessment Model Development in next step by outlining the Assessment Model, and Handbook of Healthy assessment in Secondary School, shown in Figure 4.

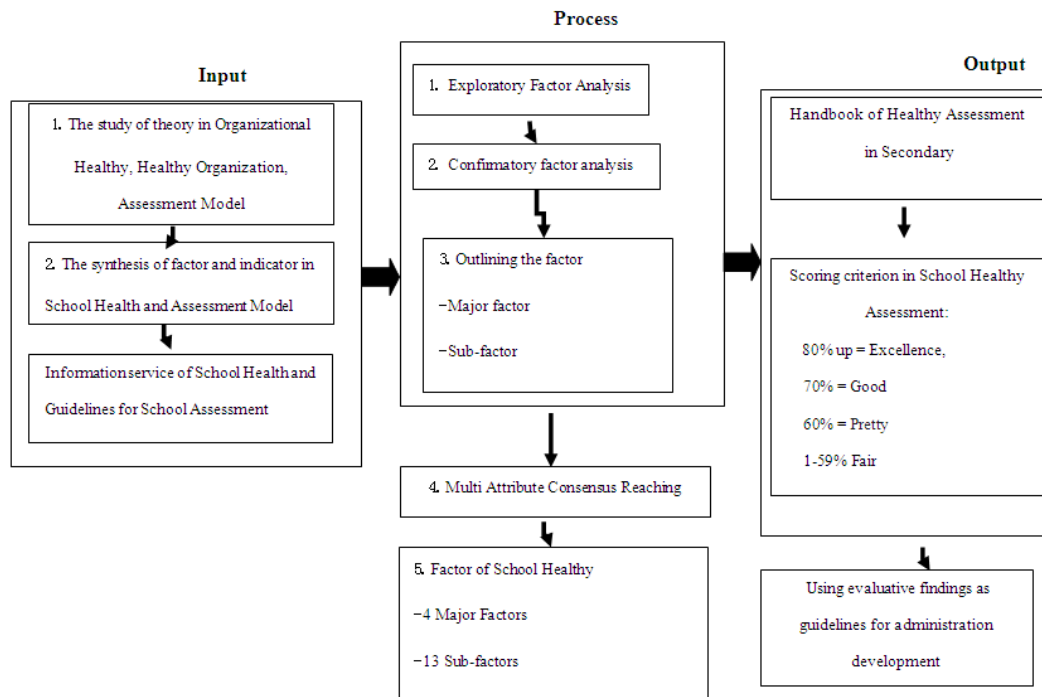


Figure 4. Outlining the assessment model and handbook of healthy assessment model in secondary school

According to Figure 4, the Assessment Model and Handbook of Healthy assessment Model in Secondary School, consisted of 3 evaluative processes including: the Input, Process, and Product with following details: 1) Input Factor referred to the study of theory regarding to the Organizational Healthy, Healthy Organization, Assessment Model by covering the major factor, sub-factor, and indicator of school Healthy, 2) Process referred to the EFA and CFA. Then, the researcher used the process of MACR in order to obtain precise school Healthy factor as: 4 aspects of major factor, 13 aspects of sub-factor, 68 indicators aimed to obtain concrete major factor, sub-factor, and indicator which could be easily measured and correct, and 3) Output referred to the school obtained Handbook of Healthy assessment in Secondary School. Considering to judge the school Healthy level compared with percentage score based on criterion of score from school Healthy assessment including: 80% up = Excellence, 70-75% = Good, 60 = Fair, 1-59 = to be improved levels. In addition, the school used these evaluative findings as guidelines for administration development.

VI) The evaluative findings Assessment Model Quality by persons who tried out the Assessment Model from criterion of evaluative quality including: the Utility Standard, the Feasibility Standard, the Propriety Standard, and the Accuracy Standard, found that the related person group in trying out the assessment Model, had opinion on the assessment Model, in overall, in “High” level.

VII) The evaluative findings of Handbook of Healthy Assessment in Secondary School, found that the related person group, had their opinion on the Handbook of Healthy Assessment, in overall, in “High” level.

## 5. Conclusions

The Factor of Healthy Assessment in Secondary School consisted of 4 major factors including: the Utility Standard, the Feasibility Standard, the Propriety Standard, and the Accuracy Standard, found that the related person group in trying out the Assessment Model, had their opinion on the Assessment Model, in overall, in “High” level. In addition, the evaluative findings of the Handbook for Healthy Assessment in Secondary School, found that the related group in trying out the Assessment Model, had their opinion on the Handbook for Healthy Assessment, in overall, in “High” level.

## 6. Discussions

I) The findings of construction for Healthy Assessment Model in Secondary School, according to research findings found that the Healthy Assessment Model consisted of 3 steps as system including: the Input, Process, and Output as follows: 1) the Input Factor was a study of theory in organizational Healthy, Healthy organization, assessment model for specifying the factors of organizational Healthy of school, 2) the Process factor was an

Exploratory factor Analysis, and Confirmative Factor Analysis, to obtain the major factor, sub-factor, and indicator of organizational Healthy in school, and 3) the Output Factor was to obtain the Assessment Model, and Handbook for Healthy Assessment of School as well as criterion for being able to analyze the indicator of School Healthy correctly and thoroughly in order to be useful for school management most.

II) The findings in trying out in 3 schools as: large sized school, medium sized school, and small sized school, found that: 1) the findings in trying out the Healthy Assessment Model in Large Sized Secondary School, found that the Major Factor 1, the Organization, was in "Excellence" level. The Major Factor 2, the Administrator, was in "Excellence" level. The Major Factor 3, the Teacher, was in "Good" level. The Major Factor 4, the Environment, was in "Excellence" level. 2) The findings in trying out the Healthy Assessment Model in Medium Sized Secondary School, found that the Major Factor 1, the Organization, was in "Good" level. The Major Factor 2, the Administrator, was in "Good" level. The Major Factor 3, the Teacher, was in "Good" level. The Major Factor 4, the Environment, was in "Excellent" level. 3) The findings in trying out the Healthy Assessment Model in Small Sized School, found that the Major Factor 1, the Organization, was in "Fair" level. The Major Factor 2, the Administrators, was in "Good" level. The Major Factor 3, the Teacher, was in "Good" level. The Major Factor 4, the Environment, was in "Fair" level. The findings were supported by Stufflebeam's (1981; 2001) definition that the assessment of assessment work referred to the determination of value and utility for assessment. Later on, the operational definition was clarified based on standard approach for evaluators as specified by the Standard of assessment Commission, as the criterion in clarification that "the assessment of assessment work referred to the implementation process to obtain information technology in descriptive as well as judgment in the Utility, the Feasibility, the Propriety, and the Accuracy of assessment as well as the information technology of systematic assessment implementation, honesty, acceptance, and responsibility in assessment implementation for society in order to use the findings as guidelines for assessment implementation by reflecting the strong point, weak point of assessment report. Moreover, it was also found that Brooks (1999) studied the Effect of usage in Quality Assessment Process and Planning for improving Special Education for Educational management in preparing the document and occurred effect of students' study in Special Education Organization caused by the Quality Assessment Process, and Educational Improvement. The findings of data analysis from document and information from interview, found that the school obtained external quality assessment, was efficient caused by the usage of Quality Assessment Process, and Educational Improvement Planning.

III) The evaluative findings of Assessment Model in Secondary School, according to the trying out of Healthy Assessment Model in Secondary School, the related persons in trying out the Healthy Assessment Model of Secondary School, had opinion on Healthy assessment Model in Secondary School, in overall, in "High" level. Considering each aspect, found that the Utility, the Feasibility, the Propriety, and the Accuracy was in "High" level in every aspect. The might be due to the Development of Healthy Assessment Model of this study, was processed by the systematic development as well as being reliable, found that the analysis findings of congruence between model, and empirical data, the indicator of Root Mean Squared Error of Approximation

(RMSEA) was .000, the value was between 0-.05, showed that the model was congruent with empirical data in "Very Good" level for ascertain to obtain major factor, sub-factor, and indicator of Secondary School Healthy. Then, it was investigated in Propriety and Feasibility of tentative model, major factor, sub0factor, indicator of Healthy in Secondary School by applying the Attribute Consensus Reaching: MACR. Nine experts consisted of the experts in Measurement and Evaluation, the experts in administration, and the experts as representatives from Secondary School, 3 persons each aspect. The information technology was obtain to be used in improving and developing the Assessment Model to be more complete. It was congruent with Amon Malasi (2011) developed the Model of Educational Risk assessment for Suansunanta Rajabhat University, investigated the Propriety and Feasibility of tentative assessment model in the Risk Assessment Factor, Risk, Indicator of Risk, and Criterion of Risk Assessment by applying the Multi Attribute Consensus Reaching by 9 experts including the experts in Risk assessment, the experts in Measurement and Evaluation, the experts as representatives from Rajabhat University, 3 experts each group. In addition, it was also supported by research findings of Nakanchai Chanurai (2011) in the Development of Model in the Findings Usage of External Quality Assessment for developing Small Sized School in North Eastern Region: The Application of Research Approach for developing the Organization of Investigation in the Propriety, and Feasibility of tentative model in Usage of the findings from External Quality Assessment in order to develop quality of small sized school by 4 groups of experts, 20 persons by Multi Attribute Consensus Reaching: MACR. The researcher used the obtained information technology for improving and developing the model to be more complete.

## 7. Recommendations

According to research findings, It was an implementation by the school staffs aimed to use information technology obtaining from School Healthy Assessment for administrative decision making. The information technology was not used for judging pass-fail, or find fault, punishing or rewarding. Therefore, the school should construct knowledge and comprehension with every division of teachers and Educational Staff. Specifically, the evaluators of Healthy Assessment in Secondary School should implement the assessment in order to receive accurate information as the reality as much as possible without any prejudice or bias. In assessment implementation, the outsiders should be considered to participate in evaluation in order to ascertain the accuracy and reliability of evaluative findings.

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