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Structural Equation Model for Goodness Competency Development According to Buddhist Principles of Students in Secondary Schools

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Abstract

The purposes of this research were 1) to study the compositions of the Structural Equation Model for goodness competency development according to Buddhist principles of students in secondary schools, 2) to develop the structural equation model for goodness competency development according to Buddhist principles of students in secondary schools, and 3) to propose the structural equation model for goodness competency development according to Buddhist principles of students in secondary schools. Multiphase mixed methods research was designed by using quantitative methods to extend qualitative results. It was divided into 3 phases. Phases 1-2 used qualitative research, the key informant was 4 educators and 10key informants from monks, school administrators and teachers who participated in the project including 9 experts for focus group discussion. They were selected by purposive sampling. Data were analyzed by using analytic induction. Phase 3 used quantitative research, the sample group consisted of 470 samples. The data were obtained from two-stage random sampling, the data were analyzed by descriptive statistics, Pearson's Correlation Coefficient, and research hypothesis was tested by validity of the Structural Equation Model. Results showed that 1) the compositions of the structural equation model for goodness competency development according to Buddhist principles of students in secondary schools consisted of 4 components: (1) the process of 7 good habits, (2) PDCA development process, (3) Buddhist principles, (4) the competence of students. 2) The Structural Equation Model for goodness competency development according to Buddhist principles of students in secondary schools consisted of 2 exogenous latent variables: (1) the process of 7 good habits, and (2) PDCA development process. There are 7 observed variables of the process of 7 good habits. The observed variables were (1) keeping the 5 precepts, (2) chanting meditation and meditating, (3) keeping the bedroom and bathroom clean and orderly, (4) thinking well by touching the people around you, (5) speaking well, (6) doing good for service or saving merit, and (7) participate in happy hour activities. The observed variables of PDCA development process consisted of 4 variables which were Plan, Do, Check, and Act. Two endogenous variables were: (1) student

competency, and (2) Buddhist principles. Observed variable of student competency consisted of 6 variables: (1) self-management competency, (2) communication competency, (3) teamwork competency, (4) higher thinking competency, (5) strong citizen competency, and (6) persistence competency together with nature and sustainable science. The observed variables of the Buddhist principles consisted of 3 variables: (1) the development of social relations, (2) the development of the mind, (3) the development of cognition. 3) The Structural Equation Model for goodness competency development according to Buddhist principles of students in secondary schools fit with the empirical data (Chi-square = 117.154, df= 94, p= .0532, GFI=.976, AGFI=.946, RMR=.0135) Accounting for the variations in student competency was 87.40 percent, and it indicated that the process of 7 good habits, PDCA development process, and Buddhist principles can promote student competency by having Buddhist principles as a mediator in the Structural Equation Model for goodness competency development according to Buddhist principles of students in secondary schools.

Keywords: Goodness Competency, PDCA Development Process, Buddhist Principles, Secondary Schools.

Introduction

Constitution of the Kingdom of Thailand, Chapter 16, National Reform, Section 258, E. Education, Article 4 [1] to improve teaching and learning at all levels so that learners can study according to their aptitudes and to improve the structure of relevant agencies to achieve that goal in accordance with national and local levels. The heart of the study is "Learning of the learners" in education reform to be successful, it is necessary to reform the learning of learners. In learning reform, there are important elements that are related, many more like a teacher, teaching and assessment courses. These four elements will support and facilitate learners to achieve quality learning and to develop important competencies that can be used in real life today and in the future [2] (core competency) in 6 aspects [3] as a goal to develop the skills necessary for learners to live in the present and in the future, namely: 1) Self-management competency, 2) Communication performance, 3) The ability to work together as a team, 4) Higher thinking performance, 5) The ability to be a strong citizen and 6) The ability to live in harmony with nature and science in a sustainable way. Management of education to have competency is therefore important in preparing the learners.

Processes according to Buddhist principles can develop learners' competencies. Self-development according to Buddhism is a process of coordinating working relationships as supporting factors in terms of behavior, mind and wisdom. Phra Brahmagunabhorn [4] said that the Trisikkha is a training system from the outside to the inside from the coarse part to the fine part and from the simpler parts into the more difficult and profound parts. When training in the inner level, which is the mind level and wisdom level. The result was sent back out to help with life until life skills have expertise in solving problems surrounding problems that arise in today's society; have virtue; qualitative 5 precepts preservation school project; warm family with 7 virtuous routines [5]. Activities and indicators of success are in line with the quality development plan and support, promote, develop learning skills in the 21st century, develop learners' competencies to have knowledge, skills, and good attitudes through doing 7 good routines, consisting of 6 daily routines and 1 weekly routine, as follows: Keep the five precepts, pray, meditate, keep the bedroom, and kitchen clean and tidy, think well by touching those around you, speak well by speaking nicely, do good by making at least one merit or making merit, and participating in happy hour activities, really which is a weekly routine at least 12 times. Happy hour is really a time when members come together to do good deeds or share experiences of doing good deeds. The purpose is to bring group

power to enhance single power in doing good deeds. The activity form is not fixed, can be designed and modified as appropriate, but the main activity that should be maintained is praying, praying, meditating, 5 precepts. Together, members tell stories or good experiences. From the 6 daily good routines, watch the media or listen to lectures that emphasize the importance or inspire people to do 7 good routines continuously. Which is the real happy hour activity? It will help strengthen the morale of the members to do good deeds to be stable and even stronger because at this hour the members will only discuss self-correction and responsibility, creative problem solving until bringing happiness to both yourself and those around you. As if everyone had practiced to remove bullying germs from the virtuous person in them to exchange with each other along with learning which person should be worshiped is to choose an idol or role model, which is the Buddha, monks who practice well, collecting people who do good deeds and contribute to the nation or the world, even classmates who intend to do good deeds, etc.

From the study of the above, information was taken into consideration the consistency of student development through the process according to Buddhist principles, it is possible that can help students to have the necessary competencies to live in the present and in the future. This research aims to study the compositions of the Structural Equation Model for goodness competency development according to Buddhist principles of students in secondary schools which the study results research this time. It will be important information that the Sangha and relevant agencies. The results of the study can be used together to develop learners to have better performance and efficiency, and most importantly, to bring the principles and teachings in Buddhism to benefit the nation and promote Buddhism to grow and be stable.

Research objectives

1) To study the compositions of the Structural Equation Model for goodness competency development according to Buddhist principles of students in secondary schools.
2) To develop the Structural Equation Model for goodness competency development according to Buddhist principles of students in secondary schools.
3) To propose the Structural Equation Model for goodness competency development according to Buddhist principles of students in secondary schools.

Conceptual framework

Structural Equation Model for goodness competency development according to Buddhist principles of students in secondary schools derived from the study of the document. The relationship between variables can be shown as follows:

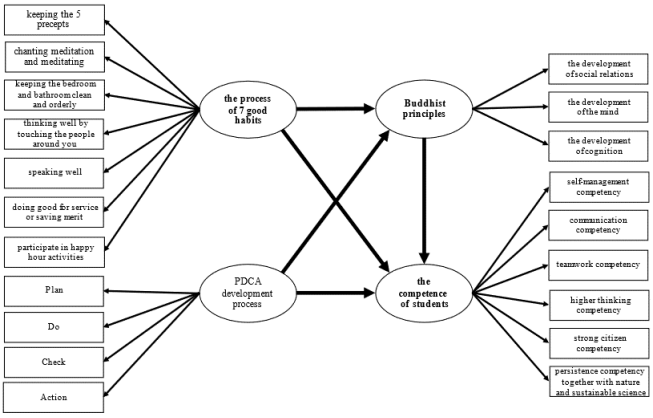


Figure 1 *Conceptual Framework*

Research Methods

Phase 1: In-depth interview to study the components of the Structural Equation Model for goodness competency development according to Buddhist principles of students in secondary schools. The results obtained from the first phase of the research were the components of the Structural Equation Model for goodness competency development according to Buddhist principles of students in secondary schools and the model for the development of Buddhist virtue-based performance of secondary school students which answers the research objective 1.

Phase 2: Focus group discussion to develop a Structural Equation Model for the development of Buddhist merit-based competency among secondary school students. The results obtained from the second phase of the research were to obtain Structural Equation Model for goodness competency development according to Buddhist principles of students in secondary schools and to verify the validity of the Structural Equation Model for goodness competency development according to Buddhist principles of students in secondary schools which answers the research objective 2.

Phase 3: Use of questionnaires to propose Structural Equation Model for goodness competency development according to Buddhist principles of students in secondary schools. The results obtained from the third phase of the research were the complete model of Structural Equation Model for goodness competency development according to Buddhist principles of students in secondary schools, which answered the research objective 3.

Research results

The compositions of the Structural Equation Model for goodness competency development according to Buddhist principles of students in secondary schools, from the study of relevant documents and research and in-depth interviews, key informants are Educational scholars, 4 key informants, monks, school administrators and teachers. It was found that there were 4 components of the structural equation modeling for the development of virtue performance according to Buddhist principles in secondary schools: 1) 7 routines of good deeds process, 2) PDCA development process, 3) Buddhist principles, and 4) student performance.

The Development of the Structural Equation Model for goodness competency development according to Buddhist principles of students in secondary schools from focus group discussion of 9 experts, it was found that there were 4 latent variables, namely, the process of 7 good habits. There were 7 observable variables, PDCA development process had 4 observable variables, Buddhadhamma principles had 3 observable variables, student performance. There are 6 observable variables, altogether 4 latent variables, 20 observable variables has the following components: Component 1 Process aspect 7 good routines 1) Keep the five precepts, 2) Pray and meditate, 3) Store the bedroom keep the bathroom clean and tidy, 4) Think good by catching people around you, 5) Speak well with sweet talk, 6) Do good deeds by making merit or making merit at least 1 thing, and 7) Really participating in happy hour activities. The second component of the PDCA development process consists of: 1) Planning, 2) Implementation of the Plan, 3) Checking, and 4) Action. Component 3 of the Buddhadhamma consisted of: 1) Developing the level of social relations, 2) Developing mind and 3) develop cognitive and understanding. Component 4 of student competencies consisted of: 1). Self-management competency, 2) Communication performance, 3) The ability to work together as a team, and 4) Higher thinking performance, 5) Strong citizenship competence, and

6) The ability to live in harmony with nature and sustainable technology. When considering the results of analyzing the Structural Equation Model for goodness competency development according to Buddhist principles of students in secondary schools, it was found that the model was consistent with the empirical data considering from the statistics used to check the consistency between the model and empirical data, including the chi-square value is 117.15 degrees of freedom is 94, the probability (p) is 0.053, that is, the Chi-square value is not significantly different from zero, indicating that the main hypothesis is accepted that the Structural Equation Model. The development of virtue performance according to Buddhist principles of secondary school students developed in harmony with empirical data which is consistent with the analytical results, Goodness of Fit Index (GFI) is 0.976, Adjusted Goodness of Fit Index (AGFI) is 0.946, which is close to 1, and the root-mean-square index of the section the Root Mean Square Residual (RMR) is equal to 0.0135, approaching zero and the remainder in the form of the standard score between the highest variables (Largest Standardized Residuals) equals 2.990, which supports that the research model is consistent with the empirical data.when considering the reliability of the observed variables. It was found that the observed variables had a reliability value between 0.650 and 0.919, with the variable having the highest reliability. Action (PDCA4) had a reliability value of 0.919, followed by the level of social relationship development (TRISIK1) had a reliability value of 0.860, and the variable with the lowest reliability was kept the bedroom and bathroom clean and tidy (GOOD3) with a reliability value of 0.650. Overall, the reliability of most of the observed variables is high.

When considering the predictive coefficient (R-SQUARE) of internal latent variable of Structural Equation Model, it was found that the Buddhadhamma principle (TRISIK) had a predictive coefficient of 0.826, indicating that the variables within the model, namely the 7 Good Habits of Good Practice (GOOD) process and the PDCA development process (PDCA), could explain the variance of the Buddhadhamma principle (TRISIK). 82.6. It was found that student performance (SCOMPET) had a predictive coefficient of 0.874, indicating that the variables within the model were the 7 Good Habits (GOOD) process, the PDCA development process (PDCA), and the Buddhist principles (TRISIK) could explain the variance in the performance of students. Students (SCOMPET) got 87.4%. When considering the correlation matrix between latent variables, it was found that the correlation coefficient between the latent variables ranged from 0.838 to 0.933, with all pairs of variables having the same direction relationship (positive correlation) variable with the highest correlation coefficient is student performance (SCOMPET) and Buddhadhamma principles (TRISIK) equal to 0.933 with a high correlation, indicating that students' performance increases with Buddhadhamma principles. The second correlation coefficient was 7 Good Habits (GOOD) process and PDCA development process (PDCA), with a correlation coefficient of 0.919, indicating that the 7 Good Habits process increased the PDCA development process, too.

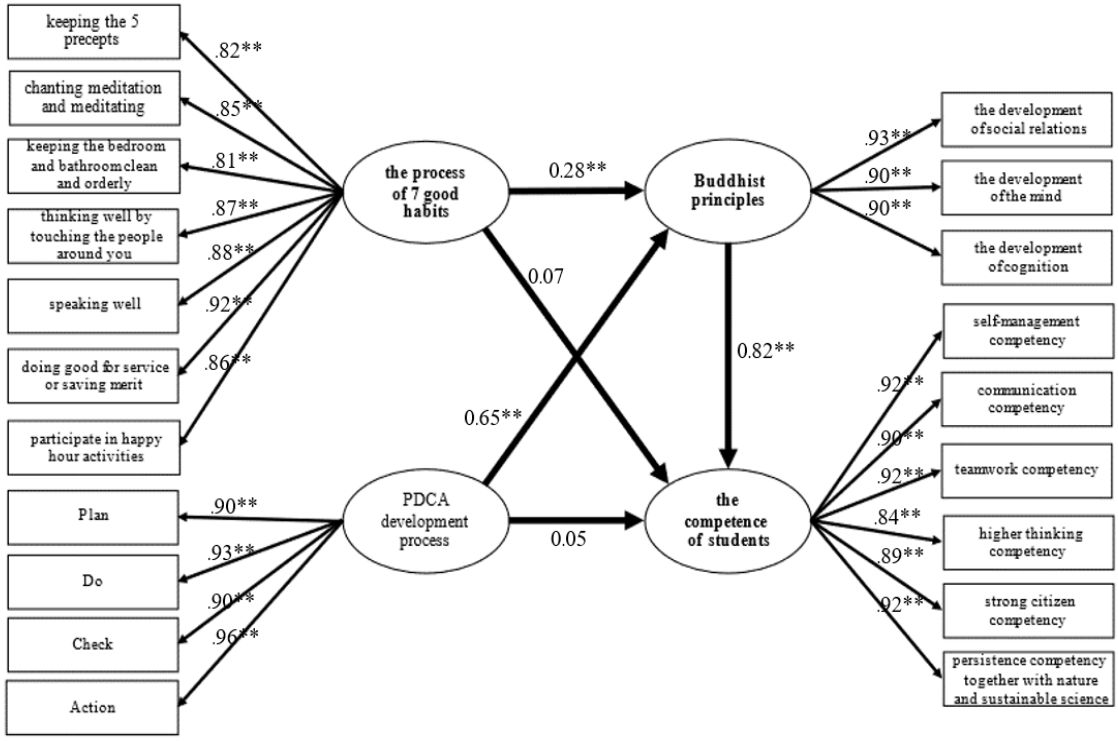
When considering the indirect and direct influences between the variables in the model, it was found that the relationship between the Buddhist Principles (TRISIK) and the Seven Good Habits of Good Practices (GOOD) had a total effect of 0.277, only a direct effect of 0.277. Dhamma (TRISIK) and PDCA Development Process (PDCA) had a total effect of 0.648, only a direct effect of 0.648, the relationship between student performance variables (SCOMPET) and process 7 good routines (GOOD), had a total effect of 0.301, and had an indirect effect 0.228 and a direct influence of 0.073. The relationship between student performance variables (SCOMPET) and the PDCA development process (PDCA) had a total influence of 0.585, an indirect effect of 0.533 and a direct influence of 0.053 of the relationship between student performance variables (SCOMPET), and Buddhist principles (TRISIK) had a total influence of 0.823 with only a direct influence of 0.823. It was notable that two variables,

namely, the 7 Good Habits of Good Practice (GOOD) process and the PDCA development process (PDCA), had a positive total influence, positive indirect influence and has a positive direct influence. It was shown that the 7 Good Habits (GOOD) process and the PDCA development process (PDCA) indirectly influenced the student performance variable (SCOMPET) through the Buddhadhamma principal variable (TRISIK) and directly influenced the student performance variable (SCOMPET) was statistically significant at the .01 level.

Table 1 *Statistical values of the correlation analysis between latent variables and the analysis of the influence of the Structural Equation Model for goodness competency development according to Buddhist principles of students in secondary schools*

Variables	TRISIK			SCOMPET		
	TE	IE	DE	TE	IE	DE
GOOD	.277**		.277**	.301**	.228**	.073
	(.078)		(.078)	(.081)	(.066)	(.065)
PDCA	.648**		.648**	.585**	.533**	.053
	(.081)		(.081)	(.082)	(.076)	(.072)
TRISIK				.823**		.823**
				(.062)		(.062)
Statistics	χ^2 = 117.154, **df** = 94, **p** = .0532, **GFI** =.976, **AGFI** = .946, **RMR** = .0135					
Variable	GOOD1	GOOD2	GOOD3	GOOD4	GOOD5	GOOD6
Reliability	0.669	0.720	0.650	0.751	0.778	0.855
Variable	GOOD7	PDCA1	PDCA2	PDCA3	PDCA4	
Reliability	0.734	0.814	0.870	0.808	0.919	
Variable	TRISIK1	TRISIK2	TRISIK3			
Reliability	0.860	0.806	0.810			
Variable	SCOMPET1	SCOMPET2	SCOMPET3	SCOMPET4	SCOMPET5	SCOMPET6
Reliability	0.853	0.813	0.855	0.714	0.797	0.839
Squared Multiple Correlations for Structural Equations		TRISIK	SCOMPET			
R SQUARE		0.826	0.874			
Correlation matrix between latent variables						
Latent variable	TRISIK	SCOMPET	GOOD	PDCA		
TRISIK	1.000					
SCOMPET	.933	1.000				
GOOD	.872	.838	1.000			
PDCA	.902	.861	.919	1.000		

Remark: The number in the parentheses is the standard error, **p < .01
TE = Total Effect, IE = Indirect Effect, DE = Direct Effect



Chi-square = 117.15, df = 94, P-value = 0.053, RMSEA = 0.023

Figure 2 *Structural Equation Model for Goodness Competency Development according to Buddhist Principles of Students in Secondary Schools*

Discussions

Research entitled on "Structural Equation Model for Goodness Competency Development according to Buddhist Principles of Students in Secondary Schools," The researchers discussed the results according to the research objectives as follows.

1. To study the components of the Structural Equation Model for "the Development of Good Performance according to Buddhist Principles of Secondary School Students", from the study of relevant documents and research and in-depth interviews, key informants are educational scholars, 4 figures/person, monks, school administrators and teachers. It was found that there were 4 components of the Structural Equation Modeling for the development of virtue performance according to Buddhist principles in secondary schools: 1) 7 routines of good deeds process, 2) PDCA development process, 3) Buddhist principles, and 4) student performance partially corresponds to Phramaha Sunan Sunando [6] has conducted research on "Management of the Establishment Project to Keep the 5 Precepts with 7 Good Routines Pathum Thani Province". The results showed that 1) Problems and obstacles caused by the discontinuity of the activities, time to practice is quite limited, lack of project summary and evaluation, 2) Components of Project Management (PDCA); 1) The company plans activities by sub-dividing from the Pracharat Temple, creates happiness project, organized a project with the monks of Wat Khian Khet, Pathum Thani province, 3) Inspection; the company has checked the names of participants in the activities. The company has adjusted its strategy for organizing activities in limited time. 3. The project management model consists of: keeping the precepts, chanting, meditating, keeping the room clean, good thinking, good talking, good doing, being happy actually in hour activities.

2. To develop a Structural Equation Model for "the Development of Good Performance according to Buddhist principles of Secondary School Students", from a group discussion of 9 experts/person, it was found that there were 4 latent variables, namely, the process of 7 good habits. There were 7 observable variables, PDCA development process had 4 observable variables, Buddhadhamma principles had 3 observable variables, student performance. There are 6 observable variables, altogether 4 latent variables, 20 observable variables. has the following components: Component 1 Process aspect 7 good routines; 1. Keep the five precepts 2. Pray and meditate 3. Store the bedroom, keep the bathroom clean and tidy. 4. Think good by catching people around you. 5. Speak well with sweet talk. 6. Do good deeds by making merit or making merit at least 1 thing and 7. Really participating in happy hour activities? The second component of the PDCA development process consists of 1. Planning Plan 2. Implementation of the Do Plan 3. Checking and 4. Action. Component 3 of the Buddha dhamma consists of: 1. Developing the level of social relations 2. Developing mind and 3. develop cognitive and understanding, component 4 of student competencies consist of: 1. Self-management competency 2. Communication performance 3. The ability to work together as a team 4. Higher thinking performance 5. Strong citizenship competence and 6. The ability to live in harmony with nature and sustainable technology, partially corresponds to partially in line with Phra Nattawut Aggavaddhano [7] has conducted research on "A Causal Model of Factors Influencing Learning Achievement of Mathayomsuksa 6 Students in Secondary Schools under the jurisdiction of the Secondary Educational Service Area Office 4", consisted of 3 latent variables: 1) teaching quality, there were observed variables: (1) teaching was easy to understand (2) encouraged student participation (3) learning activities (4) Evaluate and give feedback (5) Use teaching media 2) Characteristics of peers. The variables observed were: (1) helping friends, (2) giving advice, (3) inviting each other to study, (4) tutoring more friends, and 3) family environment. The variables that were observed were (1) arranging home conditions suitable for learning (2) interest or stimulation in learning (3) caring for well-being (4) behavioral care. student The variables observed were: 1) achievement motivation (2) learning aptitude (3) learning strategies (4) time spent on additional studies 2) Trīsikkhā; The five precepts (2) Concentrate on studying (3) Understand the lesson in the classroom 3) Achievement the variables observed were: (1) O-NET (2) cumulative grade point average.

3. To propose a Structural Equation Model for "the Development of Good Performance according to Buddhist principles of Secondary School Students". The outcomes according to the variables for the development of virtue performance according to Buddhist principles of students in secondary schools were: 1.Process of 7 Good Habits (GOOD) 2.Process of PDCA development (PDCA) 3.Principles of Buddhism (TRISIK) 4.Student performance (SCOMPET) The basic statistical analysis of teaching quality found that the Structural Equation Model for the development of good performance according to Buddhist principles of students in secondary schools was consistent with the empirical data (Chi-square = 117.154, df= 94, p= .0532, GFI=.976, AGFI=.946, RMR=.0135), able to explain the variance in student performance 87.40% show that the process of 7 good routines PDCA development processes and Buddhist principles can foster student competency. The Buddhadhamma principle was used as a transmission variable in the Structural Equation Model for the development of virtue-based competency according to Buddhist principles of secondary school students in accordance with something with Chatchawan Kongphueng who has done research on "Influence of Factors Affecting Achievement in Analytical English Reading among Mathayomsuksa 6 Students of Schools in Bangkok." The research results can be summarized as follows: 1) All factors were at the high level in all factors. The average levels and percentages were as follows: (1) attitude factor (3.88), (2) parenting factor of family and peer relationship (3.78), (3) teacher teaching quality factor (3.58), and (4) The aptitude and learning ability factor was 49.93, with an average

score of critical English reading achievement at 48.80, which was considered moderate. 2) All factors had a positive correlation with reading achievement, analytical English. There was a statistical significance at the 0.01 level for all values, with a correlation coefficient between 0.63-0.98, with the factors of aptitude and academic ability and achievement in analytical English reading. 3) The correlation structure was consistent with the empirical data. It was found that there was a chi-square value of 314.11, degrees of freedom (df) of 117, a statistical significance (p-value) of 0.000, GFI = 0.97, AGFI = 0.95, CFI = 1.00, SRMR = 0.02, RMSEA = 0.04, with a critical sample size (CN) = 489.17. The highest direct influencing factors were aptitude and learning ability (0.98), and the highest indirect influencing factors were attitude (0.41). The highest were 1) Aptitude and learning ability factor (0.98) 2) Attitude factor (0.41) 3) Family upbringing factor and relationship among peers (0.39) and 4) teacher teaching quality factor (0.31) with statistical significance at the .01 level, analyzed 97 percent.

Knowledge from Research

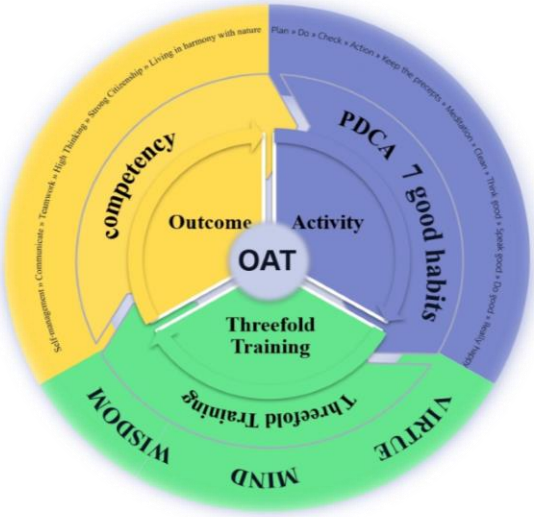


Figure 2 *Knowledge from Research*

Recommendations

Recommendation for Practice

1.1 The school organizes a curriculum to develop virtue competency according to Buddhist principles for school students.

1.2 The school participated in the qualitative 5 precepts preservation school project, warm family.

1.3 The school organizes a curriculum to develop teachers and students in 6 core competencies.

1.4 The school organizes a curriculum to develop teachers and students on the PDCA development process.

1.5 The school organizes moral development courses, such as Dhamma training, moral camps.

Recommendation for further research

2.1 The components expected to be related to the Structural Equation Model for the development of good performance according to Buddhist principles of students in other secondary schools should be further studied.

2.2 Another mediator should be studied in addition to the Buddhadhamma (Trisikkha) principles that are expected to influence the development of additional virtue competencies.

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