

*The Synthesis of an Online Collaborative Learning Model Using Multiple
Intelligences Groupings with the CIPP Model for Evaluation*

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Abstract

This research aimed to synthesize an online collaborative learning model using multiple results, the synthesized model consisted of 11 modules as follows: 1) MI Test module 2) GPA module 3) MI Matching module 4) Subject Database module 5) Analytic Content module 6) Introspective Content module 7) Interactive Content module 8) STAD (Analytic) module 9) STAD (Introspective) module 10) STAD (Interactive) module, and 11) CIPP module. Each module has different functions to support an online collaborative learning model using Multiple Intelligence for groupings. Moreover, CIPP was used for the evaluation. The results on the appropriate synthesized model by expert found that it was at a good level (Mean = 4.47, SD. = .52). In conclusion, this approach can be used to synthesize model properly for the next phase.

Keyword: *Collaborative, Multiple Intelligence*

1. Introduction

Since the Thai National Education Act B.E. 2542 (1999) was announced, the structure of education administration in both local and central areas was reconstructed. All education and management was centralized under the supervision of the Ministry of Education. The educational service area was used in local educational management. Moreover, educational processes were also changed; teaching methods were student-centered instead of classical education. It can be addressed that Thailand education reform is continually changing [1].

The learner-centered concept can be applied with learning theory in teaching. The learning theory describes that people learn from one another [2]. The examples of learning theory are collaborative learning techniques, and Multiple Intelligences theories [3]. The idea of collaborative learning and working together to exchange ideas is considered an important method to obtain knowledge. Learners can develop the type of intellectual exchange that fosters creative thinking and productive problem-solving [4]. Gardner's Multiple Intelligences theory can be used in any topics of subject in both basic and higher education. The purpose of this learning method was to create personal competitive learning [5].

The Multiple Intelligences (MI) theory of Gardner demonstrates that human intelligence is multifaceted. Gardner asserts that this theory can be applied to every characteristic of learners [6]. The Multiple Intelligences can be grouped into 3 domains [7] as follows.

1. Analytic domain is the Multiple Intelligences groups that focus on thinking and analysis.
2. Introspective domain is pointed at imagination and understanding.
3. Interactive domain is aimed at communication and interpretation.

The Multiple Intelligences Learning Activities (MILAs) are classified as presented in Table 1.

Table 1: Learning activities in Multiple Intelligences

Multiple Intelligence	Learning activities
Analytic	Simulation
	Acquisition
	Practice
	Case study
Introspective	Acquisition
	Questioning
	Practice
	Case study
Interactive	Discussion
	Acquisition
	Questioning
	Case study

The theory of Multiple Intelligences [8, 9] is the theory that can be used to understand learners' capabilities, skills, learning method, preferences and strengths. The MI can be stated that it is a useful ways to better explain the needs of students. The questionnaires showed that this model was interesting to students and their parents.

At present, MI teaching method does not cover all domains in some subjects. The groups of MI domains were set as a guideline for teaching. Therefore, the researchers concerned in synthesizing the online collaborative learning model using Multiple Intelligences groupings with the CIPP Model for evaluation. The findings can be generated by the MI learning model to find the appropriate learning activities and assist students to increase their strengths.

2. Objectives of the research

2.1 To synthesize an online collaborative learning model using Multiple Intelligences groupings and use the CIPP Model for evaluation by 10 experts focusing on group discussions.

2.2 To evaluate the satisfaction toward the synthesized model by 5 experts using evaluation questionnaires.

3. Scope of research

3.1 The synthesis of this online collaborative learning model was performed under the supervision of 10 experts using the focus group to present the discussion and conclusion.

3.2 Five experts participated in evaluation of the online collaborative learning model using Multiple Intelligences groupings and used the CIPP Model for evaluation.

3.3 The experts in this study had the qualifications as follows: holding a doctoral degree, or having an academic position, or experienced in educational or online teaching dissertation adviser, and having at least 2 years work experience.

3.4 This study was conducted in the first semester of the 2012 academic year.

4. Methodology

The research processes were separated into five steps: 1) examination of related literature, 2) interviewing the experts, 3) synthesis online collaborative learning model using Multiple Intelligences groupings by using focus group discussions, 4) evaluation of the synthesized model online collaborative learning model with the CIPP Model, and 5) design and development. The methods are presented in more detail in the following sections

4.1 The related literatures such as Multiple Intelligences, collaborative learning, the development of research instruments and software, and Thai National Education Act from both national and international sources were reviewed.

4.2 In interviewing, related literatures were reviewed for structured interview construction. The focus group was utilized to collect data from 5 experts for conceptual framework to synthesis the online collaborative learning model using Multiple Intelligences groupings with the CIPP Model for evaluation.

4.3 To synthesize the online collaborative learning model, the researchers appointed 10 experts to conduct the focus group discussion to find the appropriate online collaborative learning model using Multiple Intelligences groupings with the CIPP Model for evaluation.

4.4 To evaluate the satisfaction toward the online collaborative learning model using MI groupings, the related papers were submitted to 5 experts for assessment of each domain which can be used in teaching and enhancing learning outcome.

4.5 The experts' suggestion was developed in construction of this model. The model framework and modules' details were created.

5. Summary of research

5.1 The synthesis of the online collaborative learning model using Multiple Intelligences groupings with the CIPP Model for evaluation was composed of 11 modules as follows:

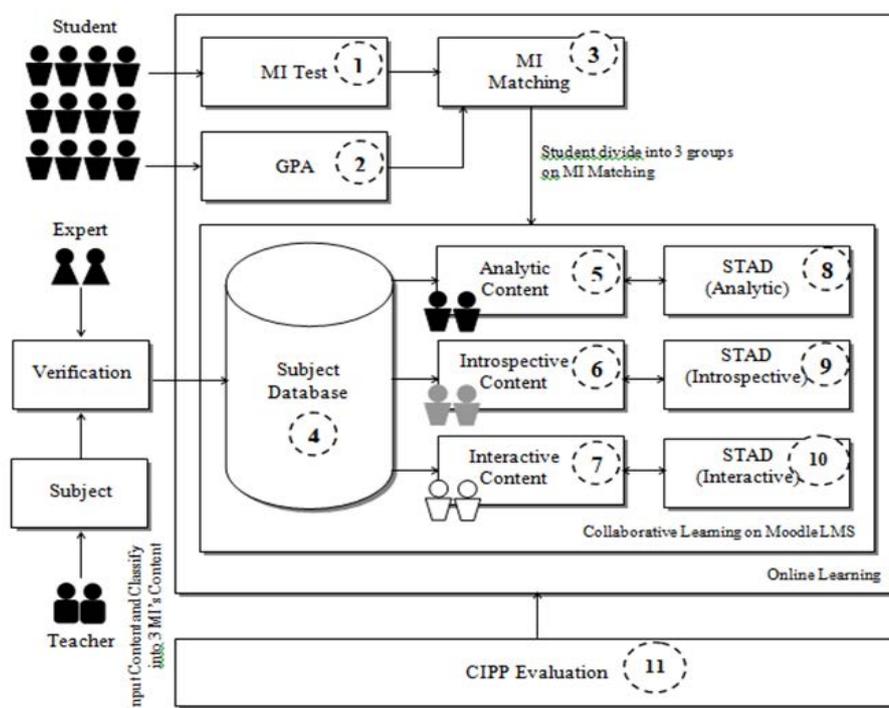


Figure1. Synthesis of model frame work

5.1.1 Multiple Intelligences (MI) Test Module: this module provided MI test for each learner. Then, the test result was grouped into 3 groups: Analytic, Introspective, and Interactive, respectively.

5.1.2 GPA Module stored the Grade Point Average (GPA) of each online log in students to rank in the Module MI Matching.

5.1.3 MI Matching Module divided learners into 3 groups by matching their MI potential with GPA. The GPA was separated into good, moderate, and weak.

5.1.4 Subject Database Module was the data base that accumulated learning lessons and learning groups from the verification of expert in each subject that created by teachers to support the MI groups: analytic, introspective, and interactive.

5.1.5 Analytic Content Module arranged contents and learning groups to suit with the analytic MI skills of learners. The analytic focused on thinking, and questioning which consisted of 1) Logical-math Intelligence, 2) Musical Intelligence, and 3) Naturalistic Intelligence.

5.1.6 Introspective Content Module provided contents and learning instruments for each learning group which was matched with the introspective domain. This introspective emphasized on the mental imagine and understanding composing of 1) Intrapersonal Intelligence, 2) Visual-spatial Intelligence, and 3) Existential Intelligence.

5.1.7 Interactive Content Module set matches the content and learning groups to the interactive domain. This domain focuses on communication and interaction skills which were Linguistic Intelligence, Interpersonal Intelligence and Kinesthetic Intelligence.

5.1.8 STAD (Analytic) Module manipulated the STAD collaborative learning activities such as competition and reward that conformed to the Analytic domain. The learning activities were simulation, acquisition, practice, and case study.

5.1.9 STAD (Analytic) Module operated the STAD learning activities in the introspective domain. The learning activities were acquisition, questioning, practice, and case study.

5.1.10 STAD (Interactive) Module managed the STAD learning activities such as competition activity and rewarding. The interactive domain activities were acquisition, questioning, practice, and case study.

5.1.11 CIPP Model Module was applied in evaluation of 4 concepts: context, input, process, and product. The context and input were exploited in evaluation structure of lesson by IOC. Questionnaires and experts were used in matching the lesson with learner Multiple Intelligences. The process was measured by leaning outcome. In addition, the output was performed by construction of questionnaires to measure skills and capabilities of teachers and students. Then, the conclusion was made.

5.2 The evaluation results of online collaborative learning model using Multiple Intelligences groupings are presented in Table2.

Table 2: Evaluation of model

Module	\bar{X}	SD	Meaning
1. MI Test Module	4.20	.45	High
2. GPA Module	4.20	.45	High
3. MI Matching Module	4.40	.55	High
4. Subject Database Module	4.60	.55	Very high
5. Introspective Content Module	4.40	.55	High
6. Introspective Content Module	4.40	.55	High
7. Interactive Content Module	4.40	.55	High
8. STAD (Analytic) Module	4.60	.55	Very high
9. STAD (Analytic) Module	4.60	.55	Very high
10. STAD (Interactive) Module	4.60	.45	Very high
11. CIPP Model Module	4.40	.55	High
Total	4.47	.52	High

6. Summary

The aim of this research was to synthesize the online collaborative learning model using Multiple Intelligences groupings and used the CIPP Model for evaluation. The findings demonstrated the framework which was formed by 11 modules are as follows: 1. MI Test Module, 2. GPA Module, 3. MI Matching Module, 4. Subject Database Module, 5. Introspective Content Module, 6. Introspective Content Module, 7. Interactive Content Module, 8. STAD (Analytic) Module, 9. STAD (Analytic) Module, 10. STAD (Interactive) Module, and 11. CIPP Model Module Subsequently, the model was nominated to five experts regarding the appropriate and structure. The score is presented at a high level ($X= 4.47$). Therefore, it can be concluded that this online collaborative learning model can be employed and contributed to the enhancement of learning outcome. Further study is required to fully consideration the implications with teaching.

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