

**A Development of a Multidisciplinary
Science Curriculum Integrating Science
with Mathematics and English for
Mathayomsuksa I of
Princess Chulabhorn's College, Trang**

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BACKGROUND

**The national curriculum
(principles, theories, contents)**



**Lack coherence and
relevance to real life
experiences**

Curriculum developing aims



**To inspire learners to love
learning systematic
studying creative thinking**

The integrated curriculum

IDEAS

Integrated Curriculum (by Robin Fogarty. 1991)

1. Within single disciplines

- Fragmented Model, Connected Model, Nested Model

2. Across several disciplines

- Sequenced Model, Shared Model, Webbed Model, Threaded Model , Integrated Model

3. Within and across learners

- Immersed Model , Networked Model

OBJECTIVES

- 1. To create a multidisciplinary curriculum by integrating both contents and activities in 3 subjects: science, mathematics and English in M I.**
- 2. To develop the quality of the multidisciplinary curriculum among science, mathematics and English in M I.**

HYPOTHESIS


- 1. The students' post-test scores of science, mathematics and English would be higher than pre-test scores.**
- 2. Average post-test scores of students' opinion on multidisciplinary curriculum should be in high level.**

3. Behavior post-test scores of teachers who teach science, mathematics and English would be higher than pre-test scores.

4. The multidisciplinary curriculum is suitable and relevant.

PROCEDURE

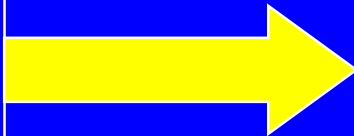
Step 1
Surveying basic
information



1. the curriculum documents
2. the related literatures
3. the experts
4. the teachers
5. the students


Step 2

Developing the
multidisciplinary
curriculum



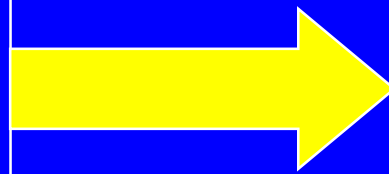
1. teacher's seminar
2. wrote the draft
multidisciplinary
curriculum
3. examined and
approved by experts
4. pilot study

Step 3
**Implementing the
multidisciplinary
curriculum**



- 1. One-Group Pretest -
Posttest Design**
- 2. Test before
implementing**
- 3. Implementing the
curriculum**
- 4. Test after
implementing**

Step 4
Revising the
multidisciplinary
curriculum



The multidisciplinary
science curriculum
which integrated
science, mathematics
and English for
Mathayomsuksa I was
effective and could be
further used.

SAMPLE GROUPS

Step 1: Surveying basic information

1. Students (12 groups of 36 students)

- M. I students of Princess Chulubhorn's College, Trang who were studying in the second semester of 2001 academic year.
- 3 groups of students (3 students / group) were randomly selected from each of 4 classrooms.

2 Teachers (36 teachers)

- 3 teachers of science, mathematics and English from 12 secondary schools in Trang who were teaching in the second semester of 2001 academic year.

3. Experts (12 experts)

- 3 curriculum research and development experts, 3 science teaching experts, 3 mathematics teaching experts and 3 English teaching experts.

Step 2 : Developing the multidisciplinary curriculum

1. Students (8)

- P.VI students who would be the M.I students of PCC, Trang in the 2002 academic year.

2 Teachers (3)

- teachers who were teaching science, mathematics and English in PCC, Trang in the 2002 academic year.

3. Experts (9)

- 3 curriculum research and development experts, 6 teaching experts. (science, mathematics and English)

Step 3 : Implementing the multidisciplinary curriculum

1. Students

- 74 M. I students of PCC, Trang in the first semester of 2002 academic year.

2 Teachers

- 3 teachers who were teaching science, mathematics and English in PCC, Trang in the 2002 academic year.

Independent variable

**The Multidisciplinary curriculum
of 3 subjects
(science, mathematics and English)**

Dependent variables

1. achievement scores in science, mathematics and English
2. students' opinion score on multidisciplinary curriculum
3. teachers' behavior

INSTRUMENTS

Step 1: Surveying basic information

- 1. questionnaire (5 rating scales) :- experts**
- 2. questionnaire (5 rating scales) :- teachers**
- 3. focus group discussions :- students**

Step 2 : Developing the multidisciplinary curriculum

1. suitable form (5 rating scales) :-experts

2. congruence form (3 rating scales) :-experts

Step 3 : Implementing the multidisciplinary curriculum

- 1) science test, mathematics test and English test :- students**
- 2) opinion questionnaire on multidisciplinary curriculum :- students**
- 3) teachers' behavior questionnaire :- students**
- 4) teachers' opinion :- teachers**

CONCLUSION

The results of developing the multidisciplinary curriculum

- 1) After the seminar, the teachers and stakeholders not only learned more on the national curriculum but also realized the necessary in creating school curriculum by themselves.

2) The results indicated 9 experts that they agreed that the drafted multidisciplinary curriculum is suitable and coherence.

3) After the pilot study, the results indicated that the students were satisfied with the multidisciplinary science curriculum as they stated that it helped them learn mathematics and English more easily.

The efficiency of the Implementing the multidisciplinary curriculum

1. Students

1) The students' post-test scores of science, mathematics and English were significantly higher than their pre-test scores at the level .05 ($p = .000$).

2) The students' average opinion post-test score on multidisciplinary curriculum was in high level. (4.42 average value from 5.00)

2. Teachers

1) The science, mathematics and English teachers' behavior post-test scores were higher than pre-test scores.

2) The opinion of the 3 teachers was the same as the students' opinion. That was the multidisciplinary curriculum made them improve and develop themselves.

3. The multidisciplinary curriculum

1) The experts' average score on the suitability of the multidisciplinary curriculum components was 3.56 – 4.56 which were higher than the criterion of 3.51.

2) The experts' average score of the congruence of the multidisciplinary curriculum components was 0.78 – 1.00 which were higher than the criterion of 0.50.

THE END