Education for Sustainable Development (ESD) under the Mobile Training Team (MTT) Project

Classroom Research by Faculty of Education, Thaksin University.
Dry and Hot?
Result from warm earth?
What does it mean?
What does it teach us?
At Katoon Village, Nakhornsrithammarat Province
Mud Disaster at Bannangstar, Yala Province
Exploded Bubble Finance
Buy condominium but may not get condominium?
What is affected by water pollution?
Refused society?
Conflicts from between individuals?
It transforms to between institutes?
Difficult to have peace?
Bad result falls to people?
Think differently can not be Thai !!!???
Who invite you?
It’s not the way of democracy.
Then education prepares or builds what such kind of future world?
“A Development of Sustainable Development Value in Teacher Education Students of Thaksin University Through an Integrated Curriculum of ESD and Course Subjects of Teacher Education Curriculum”

Dr. Suriya Hemtasilpa, Dr. Suthasinee Boonyapithak, Dr. Chuanpit Chumkong, Dr. Krissanapol Chanprom, Assistant Prof. Dr. Chutarat Sathiraphanya, and Assistant Prof. Dr. Pornpan Khemakhunasa
Background

The development of countries throughout the world that is going on nowadays may be the development based on the way of thinking or values that are not concerned with sustainable future. Then in order to shape the direction of development of a country to move on the way that concerns sustainable future for the next generation, we should develop values that support sustainable development in young generation on every dimension or every factor of sustainable development so that can lead to the action or desired characteristics.
For the faculty of education we should cultivate teacher education students to have sustainable development values for hoping that when they become to be teachers in schools they can expand and cultivate desired values and desired characteristics that contribute sustainable future.
To achieve the aim of cultivating desired values in students we have to integrate ESD into teacher education curriculum. Thus at the selling idea stage we would like to start with a project of educational action research as “A Development of Sustainable Development Value in Teacher Education Students of Thaksin University Through an Integrated Curriculum of ESD and Course Subjects of Teacher Education Curriculum” to show the feasibility and achievement of integrating ESD into curriculum.
The project is an educational action research project in developing values for sustainable development in teacher education students of Thaksin University by integrating education for sustainable development focusing the affective domain as values that support sustainable development or sustainable future into course subjects of higher education in university especially in teacher education curriculum or general education curriculum. And also aims to show the possibility of integrating ESD to teacher education curriculum to equip ESD to teacher education students.
Objective

To develop sustainable development value in teacher education students through an integrated curriculum of ESD and course subjects of teacher education curriculum.
Target Beneficiaries

Teacher education students have sustainable development value that could lead to sustainable characteristics.
Expected Results

1) Growth of sustainable development value in teacher education students

2) Effectiveness of an innovation as integrated curriculum of ESD and course subjects in teacher education curriculum.
Activities implemented: The outcomes

Dr. Suriya Hemtasilpa
Department of Evaluation and Research
Faculty of Education
Thaksin University
Education for sustainable development (ESD) was integrated into subjects in higher education level in the case of Dr. Suriya Hemtasilpa. ESD was integrated into subjects in both bachelor and master degree of education in Faculty of Education as Classroom Action Research, Qualitative Research, and Performance Measurement in bachelor degree and Qualitative Research in Education both Monday-Friday time group and Saturday-Sunday time group in master degree.
Sample groups of this research were students in different subjects as followed:

Classroom Action Research Group 17 students

Qualitative Research Group 2  26 students
Pre-test November 2, 2009 Post-test December 14, 2009.

Performance Measurement Group 1  48 students

Qualitative Research in Education Group 1501 (Monday-Friday time)  7 students
Pre-test November 2, 2009 Post-test December 14, 2009.

Qualitative Research in Education Group 1501 (Saturday-Sunday time)  19 students
The lessons followed each regular subject course outline by integrating the issues of environment, best practice in environment education, conflict-peace and how to live together in multi-culture, sufficient economy and the way of democracy life, in learning activities as problems to solve or goals to reach and encouraged students to integrate their knowledge in learned subjects to develop classroom tasks or research proposal that were useful in understanding or solving those problems.
The main pedagogical approach used in forming values, was teaching-learning cycle in *valuing process* that developed by Dr. L.R. Quisumbing as: **knowing** at cognitive level, **understanding** at conceptual level, **valuing** at affective level, and **acting** at active level.
The collecting data instrument was self evaluated rating scale of 1 to 5 scale of positive values for sustainable development, it had been constructed followed the structure of four pillars of ESD and ESD as a whole itself as in environmental dimension, economic dimension, democratic or social dimension, intercultural understanding dimension, and education for sustainable development as a whole.
The items of question followed the four steps in valuing process in each dimension and each step was weighed differently such as; knowing was weighed 1, understanding was weighed 2, valuing was weighed 3, and acting was weighed 4. Then when students rated themselves ‘Highest(5)’ for the item about valuing the score 5 was multiplied with 3 weight then they got 15 marks on that item. The instrument was as follows: Instrument.doc
The instrument had discrimination power as showing by t-test at significant level of 0.05 in every item. And also, for the reliability of the instrument shown by the Alpha coefficient at 0.78.

The pre and post test scores of values were compared by t-test for dependent samples and qualitative data were analyzed in descriptive analysis as inductive synthesizing.

The research results were as follow:
Table 1  The comparison of values of sustainable development between pre-test and post-test of learning by the integration of ESD with Classroom Action Research subject in bachelor degree

<table>
<thead>
<tr>
<th>Comparison</th>
<th>Statistics</th>
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<tbody>
<tr>
<td></td>
<td>$\bar{X}$</td>
</tr>
<tr>
<td>Pretest</td>
<td>187</td>
</tr>
<tr>
<td></td>
<td>(74.80%)</td>
</tr>
<tr>
<td>Posttest</td>
<td>204.25</td>
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<td>(81.70%)</td>
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</table>
The finding showed that values of sustainable development after learning with the lesson that integrated ESD with Classroom Action Research subject was higher than before learning significantly at 0.05 level.

The students of this group also could construct the value test of sustainable development as instrument for classroom action research by using situation that related to each dimension of education for sustainable development.
Table 2  The comparison of values of sustainable development between pre-test and post-test of learning by the integration of ESD with Qualitative Research subject in bachelor degree

<table>
<thead>
<tr>
<th>Comparison</th>
<th>Statistics</th>
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<tbody>
<tr>
<td></td>
<td>$\bar{X}$</td>
</tr>
<tr>
<td>Pretest</td>
<td>190.31</td>
</tr>
<tr>
<td></td>
<td>(76.12%)</td>
</tr>
<tr>
<td>Posttest</td>
<td>195.69</td>
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<tr>
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<td>(78.28%)</td>
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</table>
The finding showed that the mean of values of sustainable development after learning with the lesson that integrated ESD with Qualitative Research subject was higher than before learning but not at the significant level of 0.05.

When asking the students of this group, “what comment do you have about education for sustainable development?”, they expressed positively to education for sustainable development. And they also could write the research proposal in searching answer related to some dimension of education for sustainable development that they were interested.
Table 3  The comparison of values of sustainable development between pre-test and post-test of learning by the integration of ESD with Performance Measurement subject in bachelor degree.

<table>
<thead>
<tr>
<th>Comparison</th>
<th>Statistics</th>
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<tbody>
<tr>
<td></td>
<td>$\bar{X}$</td>
</tr>
<tr>
<td>Pretest</td>
<td>189.44</td>
</tr>
<tr>
<td></td>
<td>(75.78%)</td>
</tr>
<tr>
<td>Posttest</td>
<td>196.71</td>
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<td>(78.68%)</td>
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The finding showed that values of sustainable development after learning with the lesson that integrated ESD with Performance Measurement subject was higher than before learning significantly at 0.05 level.

The students of this group could define behaviour of environment preservation and could synthesize the related values of peace and also could construct desired behaviour test with scoring rubrics.
Table 4  The comparison of values of sustainable development between pre-test and post-test of learning by the integration of ESD with Qualitative Research in Education subject in master degree of Monday-Friday time group

<table>
<thead>
<tr>
<th>Comparison</th>
<th>Statistics</th>
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<tbody>
<tr>
<td></td>
<td>$X$</td>
</tr>
<tr>
<td>Pretest</td>
<td>196 (78.40%)</td>
</tr>
<tr>
<td>Posttest</td>
<td>207.14 (82.86%)</td>
</tr>
</tbody>
</table>
The finding showed that the mean of values of sustainable development after learning with the lesson that integrated ESD with Qualitative Research in Education subject was higher than before learning but not at the significant level of 0.05.

When asking the students of this group, “what comment do you have about education for sustainable development?”, they expressed positively showing being aware of necessity of education for sustainable development.
Table 5  The comparison of values of sustainable development between pre-test and post-test of learning by the integration of ESD with Qualitative Research in Education subject in master degree of Saturday-Sunday time group

<table>
<thead>
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<th>Comparison</th>
<th>Statistics</th>
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<tbody>
<tr>
<td></td>
<td>$\bar{X}$</td>
</tr>
<tr>
<td>Pretest</td>
<td>188.21</td>
</tr>
<tr>
<td></td>
<td>(75.28%)</td>
</tr>
<tr>
<td>Posttest</td>
<td>198.79</td>
</tr>
<tr>
<td></td>
<td>(79.52%)</td>
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The finding showed that values of sustainable development after learning with the lesson that integrated ESD with Qualitative Research in Education subject was higher than before learning significantly at 0.05 level.

When asking the students of this group, “what comment do you have about education for sustainable development?”, they expressed positively showing being aware of necessity of education for sustainable development. Some said, “We have to change ourselves first and then enlarge to all in the system.”
Discussion

The discussion of research result was that the basic information about sustainable development values were shown by pretest arithmetic means explained that the students had desire values around 75 % up that it might mean students had been able to learn good values related sustainable development from many other sources that it was good indeed. Even though that value had to take time in forming, the findings showed after learning from the integration of education for sustainable development with regular subjects in bachelor or master degree through 4 steps of valuing process the students’ values of sustainable development gained higher than prior.
It might imply that the integration of education for sustainable development with curriculum in higher education level was effective and the 4 steps in teaching-learning cycle of valuing process was effective and it was feasible and responsible for educators to develop sustainable development values in young generation through educational system not let them grow by nature.

The key learning experience of this educational action research was that in integrating some meaningful essences into regular subjects, teachers had to integrate them smoothly and naturally concerning of selling ideas or transformation principles for preventing feeling against changing.
Assistant Prof. Dr. Chutarat Sathiraphanya. Faculty of Health and Sports Science.

In the case of Assistant Professor Dr. Chutarat Sathiraphanya, the educational action research aimed to develop environment conservation value.

The study involved students and teaching in the Population Studies and Public Health course which includes discussion on population and environment.

Teaching approach used in the study:

1) Lecture. The lecture was intended to show students the effect of the environment on the population.
2) Study tour in an area that could be an example of an area where disasters had been caused by environmental destruction. The selected area was Ban Khiriwong community. On November 22, 1988, a storm hit the community after five days of heavy downpour. Houses were damaged and 12 people were killed. People in the community learned a lesson from the disaster. They had analyzed the cause of the disaster and found it was caused by deforestation by people in the community. Consequently, people in the community have grouped together to come up with a community development plan to prevent disaster.
People in the community have agreed not to cut down more trees and plant trees in the area hit by flash flood. They also agreed to make use of all natural resources without damaging natural resources.

3) **Real life practice.** Cloth bags have been distributed to students, so that they could reduce the usage of plastic bags and foam containers.

4) Group reporting and role playing.
Data collection instrument was a rating scale 1-5 scale questionnaire for measuring the environment conservation values. The questionnaire was constructed follow the four steps of valuing process but the equal weight was put on every item.

The data has been collected twice. The first set of data was collected during the first week of the course (October 29, 2009). The second set of data was collected on December 29, 2009 after a study tour to a selected example area.
Study Result, students gained higher value of environment conservation and of education for sustainable development than prior significantly at 0.01 level.

Learning experience from research was that teaching-learning about environment in the real area of environment destruction and from the experienced people from that event could affect the awareness and value of environment conservation effectively.
Dr. Suthasinee Boonyapithak and Assistant Prof. Dr. Pornpan Khemakhunasai conducted the educational action research used qualitative approach “The Integration of Community Study with Learning and Teaching of the Qualitative Research Course: Students’ Value Development in terms of ‘Respect for People’ for Sustainable Society”.
The research aimed to develop value of respect for people in students of bachelor degree by using approaches as learning integration management, problem based learning, value development process, knowledge sharing and knowledge resource.
Data collection using qualitative approach as follows:

1) Observation in classroom.
   (1) Researcher observed students’ behaviour in answering questions, cooperation, enthusiasm, discussion, and accepting other’s thought.

   (2) Students observed the members of the group in showing, cooperation, and accepting other’s thought.
2) Observation in research field.

(1) Researcher observed students’ behaviour at the learning sharing group with youths in communities as in questioning, exchanging knowledge, technique of telling experiences, problem solving, accepting others, respecting others, accepting both success or failure.

(2) Students observed the members of the group in questioning, exchanging knowledge, technique of telling experiences, problem solving, accepting others, respecting others, accepting both success or failure.
3) Learning exchange: Using technique of telling experiences both side of success and failure.

4) Evaluation pre and post of field work by students’ reflecting report of knowledge and experience from classroom and fieldwork.
Research result: Students knew and understood the meaning of “respect for people” and realized in the virtue of respect for human dignity higher both individual and group than prior. Students reflected that value of respect for people related with the learning process and ethics of researcher in qualitative research. They reflected they learned that communities accepted the worth of being human in society and knew that accepting the worth of being human could be found in daily life and was necessary for being good qualitative researcher.
Dr. Chuanpit Chumkong.  
Department of Curriculum and Instruction,  
Faculty of Education.

The research of Dr. Chuanpit Chumkong was “A Development of Desired Characteristics for Sustainable Development in Students of Faculty of Education by Torrance’s Future Problem Solving Instructional Model.”
The research was done by integrating education for sustainable development into Curriculum Development subject in bachelor degree level. The target groups were students who studied the course of Curriculum Development in group 1, 2, 3 and 9 in second semester of the academic year 2009.
The research aimed to develop desired characteristics for sustainable development in four dimensions as environmental, economic, social, and cultural dimension for the purpose of being able to integrate and apply in designing of teaching and learning activities for the teaching practicum of one year at school.

Research tools were lesson plans emphasized on the process of future problem solving instruction for 4 weeks and pre-test and post-test.
Research result: It found that 78 percent of students knew the information and understood the essence of sustainable development in environmental, economic, social, and cultural dimension. And also they realized and valued the necessity of action for protecting sustainable future;
For examples, they explained that they should disseminate information of sustainable development to others in large scale whether friends and others realized and valued in environment conservation, sufficient economy, democracy, and being proud of local and Thai culture and understanding other culture.
Students could integrate their knowledge about sustainable development in applying to design learning activities for enhancing desired characteristics in each dimension of sustainable development.

In conclusion, students realized that education for sustainable development was important and useful to integrate in designing curriculum and feasible to use in classroom teaching-learning and also useful in daily life.
Dr. Krissanapol Chanprom
Department of Educational Technology
Faculty of Education

Dr. Krissanapol Chanprom conducted an educational action research by integrating education for sustainable development into Introduction to Communication Arts Subject of 45 second year students of bachelor degree, minor in Communication Arts.
The research aimed to develop the values of sustainable development as follow:

1) Behaving as ways of life according to the sufficiency economy principle.

2) Behaving as ways to live together peacefully and happily in diverse culture.

3) Behaving as a good citizen in a democratic society.

4) Conserving environment for the next generation’s opportunity to improve their living conditions.
Innovation for this research, used appropriate media as web sites, video clips, CD, newspaper, magazine, journal, that related to the desired contents

The approach of teaching – learning was lecturing with media, topics from newspapers, and case study.

The collecting data instruments were questionnaire and observation.
The research result were as follow:

The values that students rated in high level or average of 4 up were:

1) Recognizing of value of sufficient living.

2) Behaving as ways to live together peacefully and happily in diverse cultures.

3) Accepting and recognizing in the value of different cultures.
The values that students rated in medium level or average of 3.50 up were:

1) Recognizing the value of good citizenship in a democratic society.
2) Understanding in the production and consumption according to sufficiency economy principle.
3) Being confident that education for sustainable development would be an important element of the foundation for our sustainable future.
4) Behaving as a good citizen in a democratic society.

5) Understanding on the conduct of a good citizen in a democratic society.

6) Behaving as ways of life that do not adversely affect the environment and also conserving environment.

7) Valuing about environmental conservation for the next generation’s opportunity to improve their living conditions.
The students reflected that obtaining or accessing to information of education for sustainable development was limited. It was found that any value that students learned through media they could understand and perceive easily. Using news from media to explain for enhancing desired values, was effective and could approach to students easily.
The problem that encountered was a limit of time and students came from various of majors and some values need time in forming then researcher had to adjust the lesson plan by trying to present most related to daily life values.
Special problems encountered in the implementation

The problem in the implementation was that the period of time in this experiment was too short for forming values and because of being careful in taking care of regular content in course syllabus then providing learning activities to complete the four steps of valuing process was very difficult.
In the case of study tour or field study in communities, the problem encountered was that it spent much time, teachers had to seek special time such as on weekend.
Target Beneficiaries impacted

The students that were target group in research project were stimulated to think and learn more about crises and how to prevent or solve problems of their own future resources or their own world. They were developed in vision for solving problems may occur in the future.
The students were encouraged to be prompt to take responsibility to communities and society. And they had opportunities to integrate their knowledge to solve problems that were meaningful to their lives.
Results obtained: impact analysis

Research results were as mentioned prior, it showed success of developing sustainable development values and the effectiveness of teaching-learning approaches and also the feasibility of applying the integration of education for sustainable development with course subjects in teacher education curriculum or curriculum of another country.
Concluding Comments

Integration of education for sustainable development into course subjects in higher education curriculum is feasible and meaningful and being satisfied by students. However, in integration should be careful in setting proportion of education for sustainable development and regular subject in according to achieve objectives of both essences and do not decrease the significance of regular subject in curriculum otherwise you would like to re-improve the curriculum.
Students should learn through every step of valuing process then the value can be formed sustainably but sometime there are not sufficient time then the teacher should adapt the approach or seek available alternative to strengthen the weak point. The nature of content of sustainable development related to crises of future world or sustainable future then the future problem solving instruction model could be available.
Next Research Project

“A Development of Training Curriculum for Developing Skills in Appropriate Learning Assessment to Education for Sustainable Future”
Thank You

Thaksin University
Thailand