European Journal of Educational and Development Psychology

Vol.3, No.3, pp.18-21, September 2015

Published by European Centre for Research Training and Development UK (www.eajournals.org)

# DEVELOPING COMMON CORE THEMES TO INTEGRATE ENVIRONMENT AND CLIMATE CHANGE EDUCATION INTO TEACHING AND LEARNING BIOLOGY IN VIETNAMESE SECONDARY SCHOOLS

**Dr. Le Thanh Oai**
The Journal of Education, Vietnamese Ministry of Education

**Ms. Duong Thi Thu Huong**
The Vietnam Institute of Educational Sciences

**Ms. Nguyen Thi Quyen**
Hanoi National University of Education

**ABSTRACT:** *This paper examined the development of common core themes to integrate environment and climate change education into teaching and learning Biology in Vietnamese Secondary Schools. In the framework of this paper, we propose a system of core topics in environment and climate change education with the following basic content: Environmental air, Environmental Water, Biological environment, Environmental Soil, Environmental Socio-economy. In conclusion it is necessary to develop the system of core themes that make connections between different subjects in order to solve the common problem arising from the real world, as "Thèmes de convergence" now being implemented in France.*

**KEYWORDS:** Teaching, Learning, Students, Biology, Climate Change Education

## INTRODUCTION

Themes-based teaching and learning always focuses on students' awareness activities, providing opportunities for teachers to help their students carry out learning activities both inside and outside the classroom such as entertainment, sightseeing, field survey, scientific seminar and etc.

However, in order to develop core themes of subject areas being able to contribute to integrate approporiate educational aspects in those subjects' content in secondary schools, it is necessary to follow some principles. These principles include:

(1) All established themes should be relying on the principles relating to the existence, movement and development of material world in the nature, which rules over the names of the core themes reflecting various aspects of material in the nature.

(2) The core themes should be systematically developed so that it is more likely to break down boundaries between seperately traditional subjects, enabling all subjects to contribute to intergrate educational aspects that are suitable for their contents.

(3) It is necessary to establish the integrated links in each theme system based on the rules that express the relationships between structure and function, large and small systems, microscopic and macroscopic structure, organic and inorganic things and between various operation modes of a matter in theme systems



ISSN 2055-0170(Print), SSN 2055-0189(Online)

(4) Teaching and learning activites should be driven by each theme in the system at various levels of the integration and relationships between the subjects' knowledge components, which makes these themes exist even when the subjects are presented in the separately logical ways.

(5) It is necessary to identify main contents of each theme in the system. Integrated contents of themes will be gradually expanded through regular updates of the pratical issues in the area where the school is located. This is the basis that enables subjects relating to different domains (natural sciences, social sciences & humanities, science and technology) solve a real problem together.

(6) Developing students' capabilities is the core principle of the post 2015 curriculum of general education in Vietnam. Students' competencies are able to develop only through organizing learning activities including the integration between the subject content and core themes. Science knowledge and ideas of vairous subjects shouls be selected according to the principle that aims at clarifying certain issue in core themes.

Thus, the new general education curriculum in Vietnam relying on competence-based aproach is expected focus on developing core competencies and specific competencies. One of the ways that could help to achieve these goals is integrated teaching and learning aproach. In the context of changing curriculum and textbooks, it is necessary to develop core themes as common points for designing the internal disciplinary, interdisciplinary, cross-subject and multi-disciplinary integrated learning and teaching activities in the areas of natural sciences, social sciences and humanitites, science – teachnology.

**Contents**

In the framework of this paper, we propose a system of core topics in environment and climate change education with the following basic content:

| No. | Core themes/ topics | Basic contents |
|---|---|---|
| 1 | Environmental air | - Weather and climate;<br>- The extreme weather phenomena;<br>- The greenhouse effect;<br>- Air pollution;<br>- Impact of the increase or decrease in temperature;<br>- Protect the balance of atmospheric components. |
| 2 | Environmental Water | - Effect of changes in rainfall;<br>- Acid rain and Effects of acid rain;<br>- Floods and drought;<br>- The scenarios of sea level rise;<br>- The impact of climate change on environmental water and ice;<br>- Oceans and climate change (greenhouse gas absorption);<br>- Rational use of water resources (domestic, agricultural, industrial, etc);<br>- Protect of river, estuarine, continental shelf and ocean natural resources;<br>- Prevent water pollution and protect fishery resources. |
| 3 | Biological | - Carbon cycle and climate change; |


ISSN 2055-0170(Print), SSN 2055-0189(Online)

| | | |
|---|---|---|
| | environment | - Reduce greenhouse gas emissions from deforestation and forest degradation (REDD);<br>- Nitrogen cycle and climate change;<br>- The movement of distributions of plants and animals;<br>- The invasion of alien species;<br>- The impact of climate change on ecosystems;<br>- The impact of climate change on biodiversity and biodiversity protection;<br>- Reduce and stop deforestation, increase reforestation. |
| 4 | Environmental Soil | - Floods and drought;<br>- Prevention of soil erosion and land degradation;<br>- The impact of climate change on land/soil;<br>- Exploitation and rational use of mineral resources;<br>- Sustainable Farming and absorption of greenhouse gases (climate change);<br>- Planning envionmental territory. |
| 5 | Environmental Socio-economy | - The ethical views of the environment related to climate change;<br>- Economy and Environment related to climate change;<br>- Politics and Environment related to climate change;<br>- The impact of climate change on human health;<br>- The impact of climate change on socio-economy; The role and responsibility of humans in climate change;<br>- The issue of "gender" in the response to climate change;<br>- Markets for carbon and Clean Development Mechanism (CDM);<br>- The models respond to climate change; Population, energy and climate change;<br>- Strategies and solutions for climate change adaptation in Vietnam;<br>- Strategy and measures for climate change mitigation in Vietnam;<br>- Strategy for responding to climate change in the world |

## CONCLUTION

The global general trend is to use the integrated approach in teaching and learning subjects in order to enhance knowledge's connectedness and linking. Integrated curriculum in secondary education will reduce the number of subjects that students have to learn, while solving the problem arising from the conflict between the limitation of academic learning time and the exponential growth of information. Hence, it is necessary to develop the system of core themes that make connections between different subjects in order to solve the common problem arising from the real world, as "Thèmes de convergence" now being implemented in France.


ISSN 2055-0170(Print), SSN 2055-0189(Online)

## REFERENCES

Duong Tien Sy (1999). *Environment education through learning and teaching Ecology grade 11 in secondary schools.* Thesis of Doctor

Xavier Roegiers (1996). *Integrated pedagogy or how to develop the capacities in schools.* Translators: Dao Trong Quang, Nguyen Ngoc Nhi. Education Publishing House

Wynne Harlen (2010). *Principles and big ideas of science education.* Available on the ASE website www.ase.org.uk and linked websites ISBN 978 0 86357 4 313.



ISSN 2055-0170(Print), SSN 2055-0189(Online)