

## ***SOCIAL SCIENCES***

### **EDUCATING FOR CRITICAL THINKING: REVIEW OF LITERATURE**

DANIEL S. SANTOS

*Pamantasan ng Lungsod ng Maynila  
Intramuros, Manila*

This paper summarizes ideas on critical thinking from literature reviewed at Harvard University library while the author was a visiting scholar during Spring 1998. Researches on critical thinking submitted by the author's students at PLM were content analyzed supplemented by group interview.

Ruggiero proposes three strategies for thinking instruction in the 21st century. Sternberg and Lubart think that developing creativity in children and in adults involves teaching them to use six resources: intelligence, knowledge, intellectual style, personality, motivation, and environmental context. Sternberg also discusses eight easy ways to fail in teaching critical thinking. These eight fallacies obstruct the teaching of critical thinking before we even begin and make it easy to fail. The effects of these fallacies on the teaching of critical thinking are both insidious and pernicious. The best way to promote critical thinking in an English course, in Social Studies, and in teacher education is to involve students in class discussions in which they have the opportunity to raise issues, clarify their thoughts, and test their ideas against their classmates.

In studying teaching techniques at various US schools and school districts, Brown and his colleagues at the Education Commission of the State evaluated classroom "thoughtfulness" on eight criteria. Strother points out in his paper that researches know that for students to cultivate thought they need to ask questions often and freely, become actively involved for long periods with problems that make sense to them, and engage in activities in which the teacher plays the role of coach.

In Defense of Vague Assignments, Wolfe drives that purposeful vague assignments often can force students to make their own decisions, define, and solve emerging problems, practice inquiry, discover their own purposes for writing, develop their own organizational patterns, and become secure, confident, and able

observers, readers, writers, and thinkers. In short, vague assignments can help students learn how to learn, how to appreciate a work esthetically, and how to respond personally to their reading and writing. Garrison presents his conceptual model for developing critical thinking in adult learners which include problem identification, problem definition, exploration, applicability, and integration while Schulam points out that great minds (for 7-10 year old children) start with great questions. Rath offers 14 "thinking operations"-dimensions of higher-order mental functioning that may serve as guides for developing classroom activities-for exercising thinking. Teaching for thinking is more effectively carried out when thinking tasks are used in concert with teacher's reflective, analytical, and challenging responses.

**Keywords:** critical thinking, creativity, education

## BENGUET FARMERS ADOPT AGRICULTURAL TECHNOLOGIES

WILFREDO R. ESTOLAS and CIPRIANO C. CONSOLACION

*Benguet State University*

*La Trinidad, Benguet*

Benguet farmers have grown and matured in that they want to try new farming technologies. They say that traditional and modern ways of farming can complement each other. Gone are the days when farmers clung to traditional practices.

The study surveyed farmer-respondents in Benguet who adopted mature technologies recommended by various government agencies in the province. Results of the study showed that the respondents were convinced that environmental factors, natural and man-made calamities, and beliefs affected their decision to adopt technologies.

Majority of the farms were rainfed. The problems encountered by the farmers which affected their decisions to adopt technology were: cold weather, soil erosion, and lack of water or irrigation. Majority of the respondents had low incomes.

The respondents said they wanted to be assured of market outlets for their produce since they invested capital and labor. The recommendations of the study include the following: the government should generate or develop technologies aimed at industrializing the agriculture industry. There is a need to come up with technologies for food processing, packaging, and marketing. The government should conduct research and extension activities in the farmers' fields to enable them to see for themselves the technologies introduced and establish hands-on demonstration farms so that farmers can acquire the necessary skills.

**Keywords:** Benguet farmers, agriculture, technologies, agricultural technologies

## ATTITUDES TOWARD BIODIVERSITY CONSERVATION OF MANGROVES AMONG COASTAL DWELLERS IN CATANDUANES

JIMMY T. MASAGCA\* and MANRICO T. MASAGCA\*\*

*\*Biology Department, De La Salle University  
Dasmariñas, Cavite*

*\*\*PNB Financial Center, Pasay City and DLSU-  
CBE Department of Management of Financial Institutions,  
Taft Avenue, Manila*

The island province of Catanduanes in the Bicol Region has only about 1,735 ha of classified mangrove area (approximately 1.6% of the total mangrove area of the Philippines or 16% of the mangrove areal extent in Luzon.) Although the mangrove area is relatively smaller compared to other island provinces in the country, it has enormous significance on the ecology and economy of this typhoon-prone province.

Current studies indicate that there are at least 20 major and minor mangal elements found in the mangrove areas which are characterized by both riverine and wave-dominating *allochthonous* materials. It appears that diversity of the mangrove vascular flora and macrofauna associated with this coastal marine ecosystem have long been subjected to stresses, i.e., typhoons, tidal surges and anthropogenic factors. Recently, there is now an increasing interest to involve the local people in various mangrove reforestation projects.

The purpose of this paper is to provide a small contribution to mangrove research by examining the attitudes of coastal dwellers, specially teachers toward biodiversity conservation of mangroves. An understanding of their attitudes about the values of conserving mangroves will aid in formulating appropriate educational initiatives to encourage sustainable use, rational management, and biodiversity conservation. We hope to provide a case example which will stimulate further research on the socio-cultural factors related to success in mangrove reforestation or regeneration projects.

**Keywords:** Catanduanes, mangrove, reforestation