Developing Sustainability Competencies of College Students through Environmental and Agro-Food Education

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What kind of future do we want?

• Sustainable development
  可持續發展 (China Mainland, HK…)
  永續發展 (Taiwan)

  Development that meets the needs of the present, without compromising the ability of future generations to meet their own needs.

  The Brundtland Report (Our Common Future)
Future Risks and sources

The Global Risks Report 2017

Sources of risks

- Changing climate
- Degrading environment
- Rising urbanization
- Aging population
- Rising income and wealth disparity
- Increasing polarization of societies
- Rising cyber dependency
- Rising geographic mobility
- Growing middle class in emerging economies
- Changing landscape of international governance
- Increasing national sentiment
- Shifting power
- Rising chronic diseases

Building competencies of global citizens for the future
ESD (education for SD)+SDGs (SD goals)

◆ 8 key competencies for sustainability
  ◦ system thinking competency
  ◦ anticipatory competency
  ◦ normative competency
  ◦ strategic competency
  ◦ collaborative competency
  ◦ critical thinking competency
  ◦ self-awareness competency
  ◦ integrated problem-solving competency

■ 3 categories of learning objectives
  ✔ cognitive
  ✔ socio-emotional
  ✔ behavioural

History context of EE, ESD, and others

- Nature study
- Conservation education
- Resource-use education
- Outdoor education
- The Silent Spring
- US EE Act
- UN Conf. on Human Development
- UNESCO EE Programme
- EE was mentioned in IUCN Paris Meeting
- World Conservation Strategy
- Our Common Future
- Rio Earth Summit
- Tbilisi Declaration
- SDG 17
- UNESCO: ESD+SDG
Environmental Education

• Tbilisi Declaration, 1977
  ◦ a learning process that increases people's knowledge and awareness about the environment and associated challenges, develops the necessary skills and expertise to address the challenges, and fosters attitudes, motivations, and commitments to make informed decisions and take responsible action (UNESCO).
Focus of environmental education

- **Awareness** and sensitivity about the environment and environmental challenges
- **Knowledge** and understanding about the environment and environmental challenges
- **Attitude** concern for the environment and help to maintain environmental quality
- **Skills** to mitigate the environmental problems
- **Participation** for exercising existing knowledge and environmental related programs

*Taiwan Environmental Education Act, 2011*

- Common and Equality
- Mandatory training
- Official funding
Agro-food education is an educational process, aiming for individual and societal understanding of agriculture and food related scientific content, economic models, industrial development, cultural context, environmental loading, social justice, food security, health, risk governance, and the interrelationships among them, in which food safety and environmental friendliness of agriculture can be promoted, physical and psychological distances between consumers and food can be decreased, and sustainability of agro-food systems can be promised.
SDG#12 Responsible consumption and production

Ensure sustainable consumption and production patterns

An estimated 1.3 billion tons of food are wasted every year worldwide. In Indonesia, an estimated 13,070,000 metric tons of food are wasted every year.

ADB
SUSTAINABLE DEVELOPMENT GOALS
Join the conversation. #action2015

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Linking SDGs, toward 2030
Agro-food education in the EE course

Core ideas

- Transformative education
- Learning by doing
- Group dynamics
- Context development
- Community linkages
Fresh farmers...

Facebook group sharing

個人心得

當初選這土地，並不知道會有學校的實習課程:

是在老師宣布選這地後，自己種的嗎？究竟種些什麼呢？

因為種菜、種花的課程中，真的能磨練人心，並且也能從中獲得成就感。

話說，我們家頂樓雖然有一個8坪左右的小菜園，

但之前自己是不去照顧的。

(因為菜被貓子當頭，不會讓種子等等，所以索性就不管了！)

但今年暑假家中發生一些事，所以剛好交給照顧照顧菜園，

第一週先全部拋棄掉，但第二週想種些時候地試試在種水，

結果慢慢找到有些快速的菜，植物開始活起來，那種興奮真的很難形容。

個人心得

這個學期我們貢獻農業這門課程，老師是要讓我們親身經驗實驗教育，自

己動手種下耕作，讓我感受到興奮又緊張，小時候曾經跟著阿公下田工

作，那時候在水田裡泡著腳丫子到處奔跑，挖水、抓蝦蟇，有非常快樂

的回憶，但是長大後，開始對農業感到害怕，就不想下田了，因此這

次到農田工作，心中感到既熟悉又陌生。

第一次到我們的農園，映入眼的的是樹蔭的翠葉和石頭，我們拿着最具

使用性的作業紀錄冊，不斷的觀察著我們農業運作、水的千姿百態

下，每個人都熱情的投入，終於順利一年到一段落，後來我們在整個

地、樹、種、滴滴，農業在大家的共同努力下越來越好有規模，最

令我印象深刻的是在要用鬆土時，常常會不小心把耕到，第一次我

爬到腳，那感覺難以言喻非常可怕，但經驗實在太多了，我也漸漸習

以為常，雖然還不太熟悉，但至少可以和農田面對了。在工作的過程

中，我也體會了團隊合作的方便，我們的工作量不算少，時間卻不

長，大家分工合作，開心協力，在工作的過程中也忙的彼此聯繫，

互相幫忙，真的很有趣，一起在時間內完成故事的完成份內的工作，

心中充滿著成就感和成就感。

非常感謝老師給我們這樣難得的機會，走進農田。體驗農業的樂趣，

我有深刻體會到「松乾皆辛苦」，今後更加珍惜食物，期待我們種下

小菜苗可以快快長大，順利茁壯！
Being familiar with the soil and vegetable
Experience with agricultural things
Cook and enjoy the vegetables they planted!
Agro-food education is meaningful and effective!

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