

Project Based Learning and Bilingual Education Self-Sustainability in the Age of Globalization

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บทคัดย่อ

ผลจากการพัฒนาประเทศไปสู่ความทันสมัย ได้ก่อให้เกิดการเปลี่ยนแปลงแก่สังคมไทยอย่างมากมายในทุกด้าน ไม่ว่าจะเป็นด้านเศรษฐกิจ การเมือง วัฒนธรรม สังคมและสิ่งแวดล้อม กระบวนการของความเปลี่ยนแปลงนี้มีความสลับซับซ้อนจนยากที่จะอธิบายในเชิงสาเหตุและผลลัพธ์ได้ เพราะการเปลี่ยนแปลงทั้งหมดต่างเป็นปัจจัยเชื่อมโยงซึ่งกันและกัน สำหรับผลของการพัฒนาในด้านบวกนั้น ได้แก่ การเพิ่มขึ้นของอัตราการเจริญเติบโตทางเศรษฐกิจ ความเจริญทางวัตถุ และสาธารณูปโภคต่างๆ ระบบสื่อสารที่ทันสมัย หรือการขยายโอกาสทางการศึกษาอย่างทั่วถึงมากขึ้น แต่ผลด้านบวกเหล่านี้ส่วนใหญ่กระจายไปถึงคนในชนบทหรือผู้ด้อยโอกาสในสังคมน้อยมาก นอกจากนี้กระบวนการเปลี่ยนแปลงของสังคมได้ก่อให้เกิดผลในเชิงลบติดตามมาด้วย เช่น การต้องพึ่งพิงตลาดและพ่อค้าคนกลางในวงจรเศรษฐกิจ ความเสื่อมโทรมของทรัพยากรธรรมชาติ และการแตกสลายของระบบความสัมพันธ์แบบเครือญาติที่เคยมีอยู่แต่เดิม บทความนี้มุ่งนำเสนอและอภิปรายการนำปรัชญาเศรษฐกิจพอเพียงและการศึกษาแบบทวิภาษามาประยุกต์ใช้ในการแก้ปัญหาดังกล่าว ให้คนในสังคมได้ตระหนักถึงความพอเพียงในการดำรงชีวิต ซึ่งเป็นเงื่อนไขพื้นฐานที่ทำให้คนไทยสามารถพึ่งพาตนเอง และสามารถควบคุมและจัดการเพื่อให้ตนเองได้รับการสนองต่อความต้องการต่างๆ รวมทั้งความสามารถในการจัดการปัญหาต่างๆ ได้ด้วยตนเอง เพื่อนำสู่การพัฒนาอย่างยั่งยืนในระยะยาว

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Abstract

We live in a time of change. We have seen vast populations of people suffer under the strain of poverty, political turmoil, war and even annihilation of their city, culture, religion, and language. Yet, there are those who inspire us and give us hope; who show us a better path toward self-sufficiency and sustainability--toward our salvation. Unfortunately, we have lost many of these great people, but their legacies live on, as long as we keep the flame lit in our hearts and in our actions. In this paper, I pay tribute to His Majesty King Bhumibol Adulyadej who may have left the Thai people in body, but not in spirit, and surely, he leaves behind a legacy of progress and inspiration. It is His Majesty's Royal Projects emphasizing self-sufficiency and economically sustainable living that inspire the following discussion. In this paper, I will discuss the contributions that bilingual education and project-based learning (PBL) offers to continue His legacy toward self-sufficiency and the eradication of poverty throughout Thailand.

Keyword: Project Based Learning, Bilingual Education, Self-Sustainability

Background

There are, currently, 7,000 distinct languages in the world. This means that there also are more than 7,000 distinct cultures dwelling in each of the unique geographic and environmental locations around the world. Each culture depends on the ecosystem from which it originated. A culture is defined by its distinct set of beliefs, values and traditions that are transmitted from one generation to another. The uniqueness of each culture is a result of their geography, which creates natural boundaries like rivers, mountains, deserts, and oceans that separate people and their communities. It also is a result of the distinct language developed by communities in these isolated and remote areas. Finally, the ecosystems of these areas inspire the development of religious

beliefs and traditions regarding life, death, family, diet and clothing as well as the music, stories, arts and crafts of the culture. No two cultures are exactly alike, even when they share similar environments and ecosystems.

Culture and language are tightly woven into the fabric of delicate and unique ecosystems. Without that ecosystem, a culture and its language will struggle to survive. Throughout human history, we have witnessed the destruction of many cultures. Many lost cultures are a result of the human machine of greed and progress associated with empiricism and colonization. Today, it is estimated that half of the 7,000 languages on this planet are endangered, along with their cultures (Alliance for Linguistic Diversity). The cause of this endangerment and potential loss of human diversity on our planet is because of environmental degradation and climate change, but also because of unsustainable practices among many industries and nations around the globe. Therefore, when we talk about sustainable solutions, we must also talk about how we define it and what part the human element plays in it, but also what the implications of it are for education. How can education promote sustainable thinking, living, working, and traveling for the environmental solutions to climate change, but also for the solutions to poverty and climate change?

Analysis of the Problem: Poverty, Environmental Degradation and Climate Change

When the late King Bhumibol Adulyadej ascended the throne in 1949, WWII had ended and nations the world over were in a state of economic as well as psychological crisis. Therefore, the late King dedicated his rule to the benefit of the Thai people through his many Royal Project initiatives. In 1969, His Majesty initiated the Royal Hill Tribe Project to help the hill tribe people of the north cultivate economically sustainable crops. The crops many of the hill tribe people were cultivating at the time such as poppies for the opium trade, were not just culturally and morally damaging to the legacy of the hill tribe people, but also

were not economically or environmentally sustainable. The late King's project guided the hill tribe people to grow peaches, strawberries and coffee all of which would produce rich and economically sustaining harvests all year, unlike poppies (Pamornsoot: 2016; Tantivejkul: 2016). Although poverty is still a problem in Thailand, this and other Royal Projects by the late King have significantly improved the lives of the most impoverished people of Thailand. However, as Dr. Sumet Tantivejkul (2016) was reminded by the late King Bhumibol Adulyadej in his final royal blessing, "our work is not done."

Indeed, our work toward self-sufficiency and sustainability is not done. Today, poverty globally has reached an all-time high, while, at the same time, the accumulation of wealth has increased, but only among less than 2% of the 7.4 billion people on this planet. Three billion of the world's people live on less than \$2.50 a day (Shah, 2013). The impact this epidemic of poverty has on the environment and the people who live in it is twofold:

1. The more fortunate are also the largest consumers of the resources on the planet. The wealthiest 10% of the world's population account for 59% of consumption while the poorest 10% account for less than 1% of consumption (Shah, 2013).

2. The poor pay the price by suffering the most from environmental degradation and the consequences of climate change. This is because, unlike the rich, the poor are not mobile and lack both the education and the political power necessary to effect change in their communities and environments. We know about shanty towns in the world's poorest nations, but poverty exists everywhere, even in the world's richest nations.

Who are the world's poorest people? Ironically, the poorest people also are those people whose culture, language, and ecosystems are the most endangered. It is mostly the small, indigenous communities and people exploited

under colonial rule, and today by multinational corporations who are most endangered. Today, these poor communities continue to suffer the most from the inequality of wealth and the environmental catastrophe of global warming (Compton: 2015; Harrison; Shah: 2014).

Here are a few examples of how poverty and inequality lead to the degradation of both people and environments:

As HM the late King demonstrated, the hill tribe people were impoverished, but they were also destroying their environment with slash and burn methods that were causing deforestation of northern Thailand and with the cultivation of an unsustainable “cash” crop for the illegal drug trade, such as poppies. Similar stories can be found throughout the world.

For example, Indonesia’s slash and burn of its diverse tropical rain forests for the benefits of palm oil plantations is an example of how consumer demands from richer nations for an eco-friendly, cleaner burning fuel leads to environmental degradation in poorer nations. Yes, palm oil is a cleaner fuel, and is currently used widely in the EU, but it is causing deforestation and environmental degradation in Indonesia (Prokurat). The indigenous peoples of Indonesia are forced to abandon their ancestral homes for the big cities and ultimately will lose much of their language and culture. Indonesia is home to 255 endangered languages; all of which are languages spoken by the poorest minority groups (Endangered Languages Project).

A similar devastation has been going on in the Amazon rainforests over the last 40 years which has seen a loss of 20% of its forest, mostly for large scale cattle ranching. Beef is eaten primarily by wealthy industrialized countries with Australia and the U.S.A. at the top of the consumption list. Brazil is sixth on the list of largest consumers of beef (Cook 2016). However, Brazil, is the second

largest producer of beef coming after the U.S.A. (Cook 2016). Incidentally, Brazil is home to 194 endangered languages; again, all of which are spoken by the poorest minority groups (Endangered Languages Project).

Corporate ranching and agriculture are not the only causes of poverty, environmental degradation and endangerment of people. War contributes greatly to poverty as well. Take for example the conflict zones of Africa. Liberia, since the 1990s, has been in the middle of a very bloody civil war over control of the territory, and the diamond mines. \$8.5 billion in rough diamonds are produced just in Africa, which is 65% of the total production of rough diamonds in the world (World Diamond Council). Who is the largest consumer of diamonds? The U.S.A. leads the purchase of diamonds, with Hong Kong, and India in a very close second and third rank. Liberia is the smallest region discussed so far and has only 2 endangered languages. However, Liberia also is the poorest country on the planet with its capital, Monrovia, listed as the poorest city in the world (Compton 2015), even while its primary natural resource, diamonds, is the world's most valuable and desired resource. The primary cause of this dire poverty is, of course, the long civil war, which is the result of competition over diamonds, and the cause of widespread environmental degradation. War, it seems, has a way of migrating just as people do, because today we see many more conflict zones spreading throughout North Africa and the Middle East each of which drives the indigenous communities out and into refugee camps and immigration to other nations where they will assimilate and, over time, lose both their language and their traditions.

The people who suffer from the degradation of their environments, whether from political or economic abuses are today's refugees from global warming. They are the people relocating to environments more hospitable to life, and form the largest and poorest populations in every region. They are the ones who live in the shanty towns, slum settlements, and tent cities developed

by these migrants and refugees in search of a new life, in search of sanctuary and salvation from poverty and violence.

Discussion of the Problem: Sustainability Redefined

However, when we talk about solutions to global warming, we usually talk about things like carbon reduction schemes, alternative energy systems, and more often today the sustainability of ecosystems—that is, plants, animals and insects. If we do not address the sustainability of the world’s diverse human populations, such as those mentioned above who also are all on the endangered languages list, then we miss an important equation in our fight against climate change: the poor and the impact climate change is having on them.

In the many nations around the world, the solution to the problem of global warming and its connection to GDP has often resulted in the expulsion of the most vulnerable from their lands instead of developing their sustainability and self-sufficiency. For example, the carbon credit model for reducing carbon emissions has resulted in deforestation, reduction of biological diversity and the displacement of indigenous people in Andean Ecuador (Carter). In order to create a carbon credit generating plantation, tropical forests in Ecuador were clear cut to plant invasive non-native Eucalyptus and pine that was then classified as a “carbon-credit” generating business. Much like Indonesia’s Palm Oil Plantations, it is a profitable business model, but an environmental and human catastrophe.

Yes, poverty is a result of the current economic system and the current economic system also is driving global warming. Any economic system that uses growth in terms of production (GDP) as the benchmark for success and prosperity simply creates more poverty and more environmental degradation, and ends in climate change. The above example of deforestation around the world makes this clear and we know this today. Fortunately, some nations have taken steps to change the social relation to economic growth and happiness by institutionalizing

a new theory called GDH or Gross Domestic Happiness. This new economic theory has been adopted not only by the former King of Thailand, but also by the King of Bhutan and with enormous support from the people. This new economic philosophy focuses on the sustainability of the environment for the people; it focuses on developing self-sufficient people who work, produce, and contribute to the overall health, wealth and prosperity of all the people of the nation. It offers a good model of self-sufficiency and sustainability

Sustainability, therefore, must include the sustenance of the people who depend on, but also are part of the ecosystems that are endangered. For a nation such as Thailand, this means working to both protect the delicate ecosystems of the vast jungles of Thailand, but also protect the rural farmers many of whom depend on land that borders protected jungles for a subsistence existence. How can Thailand continue to protect both its ecosystems, natural resources such as clean water, and the rural farmers and indigenous peoples spread throughout this diverse Thai landscape?

Findings: Real Solutions for Global Warming and Poverty

Based on a long history of research and observation, the best defense against poverty is and always has been education (NCTE, Krashen, Harrison). This is especially true today because of the challenges we face with global warming, global poverty, and globalization of commerce and industry in which the poor are particularly at risk from environmental degradation and the resulting disasters from climate change. Therefore, I would argue that today, project based learning (PBL) and bilingual education are our best defense against both poverty and global warming, as well as a sustainable path into the globalization of business and trade.

1. Project Based Learning

Project Based Learning (PBL) is not new to education. Science courses like Chemistry and Biology have been applying PBL since the invention of the microscope. However, it is new to other subjects such as agriculture, economics, history, philosophy, and even language learning. What PBL means is that the teacher's role is to facilitate the student-centered development of research based solutions to real world problems such as the deforestation of the Amazon. It requires research, study, experimentation, revision, creativity, and team work. PBL promotes both academic knowledge of the subject as well as the application of that knowledge to real world problems, which means PBL builds critical intelligence and problem solving skills.

PBL can and should be used to promote the education of sustainable development and solutions to the world's problems of poverty and global warming. The future that our children will inherit will present them with many new problems that arise out of our current problems. Change is the new world order and our children will need to be ready to respond with speed and clarity of purpose, with compassion and reason, with creativity and progressive thinking in order to protect and preserve this blue planet for future generations.

Today, Thailand's Hill tribe communities have greater economic security and independence because of the late King's effort to help them learn how to live sustainably and self-sufficiently. His work with the local communities throughout Thailand are examples of Project-Based Learning. For example, the Chaipattana Foundation's Tea Oil Camellia and Oil Crops Development Project situated in the mountains of Northern Thailand in Chiang Rai province has provided the local people of this area with knowledge of both forest conservation and tea cultivation. The local people have benefitted from this problem based learning project in three ways: 1) they have learned to develop an economically sustainable business through tea cultivation, 2) they have

learned the value of preserving both the forest and the soil, and 3) they have been rewarded by their preservation of the environment which will now yield greater economic rewards for many generations, thus sustaining both their ecosystem and their culture for future generations (Pamornsoot 2016).

PBL has many applications. As I noted earlier, it has been the dominate mode of learning and teaching in math and science subjects for centuries. Today, many educators are adopting the project based learning model in all subjects (Catapano & Gray 2015). The primary difference between PBL and traditional teaching methods is the focus on learning to do as opposed to rote memorization of materials in order to pass a standardized test. Learning how to solve a problem, how to design a model, how to use a language, how to test an idea, are all tied to being a learner. Being a learner means having critical intelligence, and having problem solving and analytical skills. With higher critical intelligence and problem solving skills, as well as critical literacy, students are more efficient learners and are more adaptable. Hence, they are better equipped to learn other languages, to develop sustainable solutions and become self-sufficient.

2. Bilingual Education

Today, there are three languages that dominate in research, politics and economics: Chinese, English and Spanish. The current globalization has been driven in large part by the nations and cultures belonging to these languages. If people of other languages around the world could communicate effectively in one of these three languages, they would have access to political and economic power and, by extension, sustainable environmental solutions. Bilingualism is how the voiceless become empowered with defining and determining the solutions to poverty and environmental degradation in their own environments, and gives them the ability to develop sustainable change in their own communities and ecosystems. Through bilingual education poor communities

and indigenous communities can become self-sufficient, relying on, protecting, and preserving their own resources to sustain their own communities. This is because speaking one of these dominant language gives us a seat at the table with the world's negotiators, regulators, deal makers, and policy writers. However, bilingualism is not so easily produced as California's troubled history with it will demonstrate.

In 1999, The National Council of Teachers of English (NCTE) in the U.S.A. set forth a resolution to commit to the support, promotion, and development of bilingual education in the United States. They initiated this movement among professional teachers of English because, as they state: "bilingual education speaks to the pluralist and humane society we choose to build" (NCTE.org). This resolution was made at a time when voters in California struck down a state-wide bilingual education initiative that would have helped millions of Latino students in the state matriculate into university. Currently, Latinos in California have the lowest educational attainment with only 12% of the 15 million adult Latinos holding the bachelor's degree (Gazzar, Los Angeles Daily News, 04/29/2015). This dismal statistic is the result of years of colonization and denial of an equal, fair, and inclusive curriculum.

California's history of colonization and language assimilation began in September of 1542, when the Spanish colonized California and began teaching Spanish to tribal nations from Southern to Central California. By 1821, California and Mexico gained independence from Spain, but Spanish remained the official language. It was not until 1850 when California became a state of the U.S.A. when English became the official language. For 308 years, California was a bilingual state in which Spanish was the official language, and over 50 tribal languages were spoken by natives across the state. Today, the official language of California schools is English, regardless of the long history of migration among Natives and Latinos in the state. This history of colonization and oppression of

the languages of the colonized has left the majority of the descendants of Native Americans and Latinos without a voice in the new economic and political system. They also represent the poorest communities in California with the highest rates of crime and substance abuse.

Bilingual education can reverse this system of oppression and give a voice to the marginalized language and cultural minorities in every country, empowering them economically and politically in a world in which the dominant political and economic language is English. However, a good bilingual education also requires a good general education in the native language and culture. As NCTE and research has shown: “the more quality time students have to study and learn in their native language, the better they do later socially and academically in classes taught entirely in English” (NCTE.org; Cummins, J., 1991; Krashen, S., 2004).

A good bilingual education means that a child learns to read and write in his or her native language and in a second language. The instruction would begin with formal instruction in the native language and gradually increase exposure to the second language through context based learning. This means, more and more subjects like math and history are taught in the target, or second language as the child matriculates through the system. Studies have shown that children who read well in their native language are more likely to read well in a second language. Therefore, a good bilingual education must include print material (books) in both languages and encourage independent reading for entertainment as soon as the child is ready (Krashen, S., 1997). A bilingual school can promote not only academic success by achieving literacy in both the native and the second language, and by helping migrants and minority groups succeed in their environments, but it also preserves the linguistic and cultural heritage of minority groups and teaches all students, especially those who speak a dominant language like English, Chinese or Spanish, a second language and culture. Ending

poverty should not mean losing the diverse languages and cultures of this planet. As the above example shows, school programs like those in California using language assimilation have proven to be more damaging and oppressive than inspiring. Instead, ending poverty must mean levelling the field for all language speakers and giving everyone the tools needed to be empowered and have voice in our global community. This means that the entire system of education must be building learners with critical intelligence, advanced reading and writing skills, as well as skills analysis and problem solving.

Conclusion

It has been suggested by many in the Environmental Science community that the problem of global warming will not be solved by nations or international organizations. This was made clear from the results of the 2015 United Nations Climate Change Conference in Paris, France. Global warming and poverty will need to be tackled at the local level among the people most affected by it in order to develop really sustainable solutions that protect both our endangered ecosystems and its people. We cannot solve global warming and environmental degradation without recruiting the people most affected by it, the poorest people whose poverty makes them the “canary in the mine” for the impacts of climate change. The late King Bhumibol Adulyadej taught us this through his 70 year dedication to meeting with the most impoverished people of Thailand and working with them to find a solution to their poverty while also teaching them about sustainable forest and water conservation, and self-sufficiency. Our solutions to global warming will likely result from our personal investments of both time and money in alternative solutions for the agriculture and energy industries. However, it must also include an equal measure of investment in alternative forms of education such as bilingual programs and project based learning curriculums focusing on one mission: to end inequality, eradicate poverty and protect whole ecosystems including the human element.

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