

DESIGNING CURRICULUM INTERVENTIONS FOR TEACHING SUSTAINABLE DESIGN IN THAILAND

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ABSTRACT

As part of a larger study aiming at building a pedagogical model for teaching sustainability to Thai undergraduate design students, this paper looks at key factors affecting the learners' view of sustainability and their ability to think critically. A number of unique cultural issues will be explored, followed by discussion on the rationale and development of the curriculum interventions in a participatory action research plan that seeks to unfold if transformative learning is necessary for facilitating a paradigm shift towards sustainability in Thailand's design education.

INTRODUCTION

Thailand has attempted to expand its focus on sustainable development over the past decade and there are an increasing number of initiatives contributing to the knowledge of sustainable design. However, the implementation of sustainability in design is not yet well established. This paper explores the education aspect of this phenomenon by focusing on the role of the sustainable design pedagogy currently practiced in higher education. Taking into consideration a number of unique cultural factors influencing the teaching and learning of this subject, from key Thai values to Buddhist concepts, it exemplifies a case study of the 8-session fieldwork at one institution, along with discussion of the framework of the curriculum interventions and the initial findings. This case study is part of the initial fieldwork of the major participatory action research plan that explores the integration of transformative learning into sustainability-related design courses at undergraduate level. Thus, this paper aims to

make a contribution to the ongoing debates about sustainability teaching in Thailand's design education.

THE CONTEXT

1) Sustainability teaching in Thailand's design education

Thailand's design education in general reflects the dominant design paradigm that remains deeply grounded in the mechanistic world, gearing mainly to production, consumption, unlimited growth and the accumulation of waste. The situation is multiplied by the lack of enough knowledge on sustainable design, resulting in ineffective implementation of sustainability in design curriculum. A study by Pasupa, Evans and Lilley (2012) reveals numerous problematic issues, from a very limited amount of literature and learning resources in Thai language and most of them developed from an engineering perspective that limits designers' ability to access the information, to an insufficiency of lecturers with qualifications and experience concerning sustainable design, to the current circumstances that sustainability-related design courses are available in a limited number of institutions and usually elective courses. Lecturing is the most common approach employed. But most importantly, sustainability is often perceived as a complex concept from the West with plenty of technical terms. It has largely failed to grasp the understanding of Thai design educators and students culturally, socially, environmentally and spiritually.

2) Key Thai values influencing the educational culture

Thailand is a high power distance culture as exhibited in its strongly hierarchical and bureaucratic social systems, so Thai culture largely concerns respect for seniority. The preservation of others' egos is the major rule of Thai social interactions, resulting in key values such as face-saving and criticism avoidance (Komin 1990). All of that affects the education culture as a whole. Tracing back to history, Buddhism played a vital role in Thai education as temples were centres of learning and monks were teachers. The highest-order goal of traditional education was to conserve and pass on ideas,

practices and activities. Therefore, Thai education culture has long relied heavily on the teacher-centred approach. Nowadays the educational value of Buddhism does not much exist, but the higher status of teacher remains. In general, Thai students are passive listeners by nature, highly value accuracy, avoid risk and are often unwilling to respond to questions (Laopongharn and Sercombe 2009, Mounier and Tangchuang 2010).

THE THEORETICAL FRAMEWORK AND DISCUSSION

1) Critical pedagogy, transformative learning and education for sustainable development (ESD)

Based on Freire (1970), critical pedagogy stresses empowering learners to think and act critically with an aim to transforming the learners' life conditions. It is opposed to 'banking education', which metaphorically considers students as empty accounts ready for educators to deposit knowledge into. Among other skills like envisioning, systemic thinking, building partnerships and participation in decision-making, critical thinking is essential to Education for sustainable development or ESD which is the process of equipping students with knowledge and understanding, skills and attributes needed to work and live in a way that safeguards environmental, social and economic wellbeing, both in the present and for future generations (Tilbury and Wortman 2004).

Thai educational culture, as clarified previously, seems to clash with the concept of critical pedagogy. Atkinson (1997) asserts that critical thinking is culturally specific. It is a part of the social practices of the West, whereas Asian cultures do not adopt such practices. I agree that some elements in Thai culture seem to prevent the full realisation of students' critical thinking skill, but I would like to argue that the skill can be practiced in any learning situation if the educator views himself or herself as a change agent. At present, the literature concerning Thai educators' critical thinking skill and ability to teach critical thinking is still very limited. The lack of insight into this area points out the need to explore in future studies.

In order to foster change to the historically unsustainable trajectory of higher education, a shift to transformative learning which is a process of increasing an individual learner's capacity for change is vital. To clarify the direction of the shift, the levels of learner involvement in the negotiation of knowledge range from *transmission* which is the previously mentioned teacher-centred approach, to *transaction* which focuses on mutual learning between teacher and learners, to *transformation* which is student-centred approach to teaching and learning (Miller and Sellar 1990). Three factors crucial to advancing transformative learning include critical reflection, a liberating approach to teaching, and an equal horizontal student-teacher relationship (Freire and Macedo 1995). In relation to ESD, transformative

learning manifests when the head (envisioning solutions), the heart (deepening environmental commitments) and the hands (practical skills) are in harmony. The balanced connection of head, heart and hands is required for a new approach in design education for the next generation of designers. This is the direction that this study pursues.

2) Seeing nature through the lens of Buddhism

Thailand is a predominantly Buddhist nation. But, as it is actually practiced by the majority of the people, Thai Buddhism has long been integrated with folk beliefs like animism and Brahmanical magic and divination. It is considered largely anthropocentric because it often concerns self-effort to overcome sufferings. The rise of consumer culture has also affected Buddhist virtues through the mass media. To speak about sustainability with Thais, it tends to be more empirical to begin from articulating the concept of nature through the lens of Buddhism than from the typical Western-oriented perspective of sustainability. Three essential terms to be clarified here are *Dharma*, *Pratityasamutpada* and *Madhyama-pratipad*.

Dharma means the teaching of the Buddha as an exposition of the Natural Law applied to the problem of human suffering. One must understand the nature of things in order to attain wisdom. Hence, for Buddhist practitioners, nature is not narrowly interpreted as the phenomena of the physical world such as plants, animals and the landscape. Ideally, Buddhists do not regard nature as resources to be exploited. But this seems to remain a conceptual conflict with the way Thais practice Buddhism. The discussion on such conflict will continue in the initial findings.

Pratityasamutpada or dependent co-arising is the dharma of natural systems describing that everything arises in dependence upon multiple causes and conditions; nothing exists as a singular, independent entity (Dalai Lama 1992). *Pratityasamutpada* is in line with a number of fundamental concepts in sustainability, such as ecological literacy (the understanding of the patterns and processes by which nature sustains life), deep ecology (the philosophy considering that the living environment as a whole should be respected and regarded as having certain inalienable legal rights to live and flourish, independent of its utilitarian instrumental benefits for human use), futuring (bringing proactive concrete responses to future issues into present-day operation) and defuturing (doing something that takes a future away or prevents it from arriving). They all share the same characteristics of holism and systems thinking.

Madhyama-pratipad or the middle way is a path of moderation, between the extremes of sensual indulgence and self-mortification. It implies a balanced approach to life and the regulation of one's impulses and behaviour. This concept is central to Buddhist economics, which concerns the entire process of causes and conditions. Buddhist economics investigates how a given economic activity affects the three interconnected spheres of

human existence: the individual, society, and nature or the environment (Payutto 1994). It is suggested in E. F. Schumacher's (1973) *Small Is Beautiful: A Study of Economics As If People Mattered* as a major alternative to the Western economic mindset.

3) The interrelationships between Buddhism, sustainability and design for sustainability

It is currently not common to integrate the link between Buddhism and sustainability into design teaching in Thailand. In spite of that, I propose the structure that underpins the connection between Buddhism, sustainability and design. Table 1 presents the parallel conception of these domains, from spiritual wisdom, to foundational concepts in sustainability, to methods and tools for design for sustainability. The understanding of nature is meaningfully central. I believe that this table is pragmatic enough to be used as the content structure for the teaching and learning of Design for Sustainability in the context where Buddhist culture plays a vital role.

Table 1: A content structure for teaching sustainability to design students based on the interrelationships between Buddhism, sustainability and design for sustainability

<i>Dharma</i> (The Natural Law in Buddhism)	Sustainability	Design for Sustainability
<i>Pratīyasamutpada</i> (Dependent Co-arising)	Ecological Literacy	Designer's role as part of the system
	Environmental Ethics	Design Ethics
	Whole Systems Thinking	Life Cycle Thinking
		Stakeholder Analysis
Futuring and Defuturing	Design Futuring (Designing against unsustainability)	
<i>Madhyama-pratīpad</i> (The Middle Way)	"Small is Beautiful." & Buddhist Economics	Design for the Real World
		Design for Sufficiency Economy

THE METHODOLOGY

This study uses participatory action research as a pedagogical process to trial the new approaches through curriculum interventions. Participatory action research is a type of research in which educators examine and reflect upon their own practice and evaluate strategies to improve practice. During the pilot study in Thailand, the curriculum interventions were conducted in four institutions. But this paper only discusses one case study to exemplify the 8-session series conducted at one institution in Bangkok. The participants are final-year design students who volunteered to enrol for this optional course. The content structure is built upon *Pratīyasamutpada* (sessions 2-5) and *Madhyama-pratīpad* (session 6). The session 7 is tutorial of final

assignment aiming to assist students to use the integration of knowledge learned with their problem-based projects. Taking into account the unique cultural responsiveness of the students, the course syllabus contains a balanced mix of approaches – transmission, transaction and transformation.

Table 2: The 8-session curriculum intervention series

	Topics	Activity	Approach
1	Pre-test and course introduction	Dialogue	Transaction
2	Role of Designer	Dialogue	Transaction
	Environmental Ethics VS Design Ethics	Lecture Q&A	Transmission
	Deep Ecology	Outdoor activity	Transformation
3	Holistic Paradigm VS Mechanistic Paradigm	Dialogue	Transaction
	Whole Systems Thinking & Ecological Literacy	Lecture Q&A	Transmission
4	Life Cycle Analysis & Stakeholder Analysis	Lecture Q&A	Transmission
	Whole Systems Thinking Activity	Workshop	Transformation
5	Design Futuring VS Design Defuturing	Lecture Q&A	Transmission
	Sustainable Design Case Studies	Dialogue	Transaction
	New Product Development for Sustainability	Workshop Setting up exhibition	Transformation
6	"Small is beautiful." & Buddhist Economics	Lecture Q&A	Transmission
	Resolving local unsustainability issues by design	Dialogue	Transaction
7	Group tutorial	Dialogue	Transaction
8	Post-test	Presentation Dialogue	Transaction

The data collection tools employed in the research include reflective diary, pre-test and post-test, and focus group. A reflective account was used at the end of each session. It was designed to collect two groups of data; 1) Students' feelings and reflections towards each activity conducted in the learning environment, and 2) Students' self-evaluated levels of participation, challenge and understanding. The pre-test was conducted during the first session. Students were asked to bring in their favourite designs as cultural props to discuss. This allowed the researcher to analyse the worldviews towards nature of individuals through the discussion about their cultural props. The post-test was conducted

at the last session. The students' design project and written assignment were used to analyse if the students' worldviews have been shifted to a more holistic direction. And a focus group discussion was employed to capture what students think of the curriculum interventions in detail.

Through the pilot study, data was collected in a variety of formats with several different methods. Apart from the main data collection tools described previously, the learning activities were observed and recorded in forms of images, moving images and notes. Students' assignments also made a great contribution to the analysis process. All of this allows me to analyse the data in various ways, from looking at a worldview shift toward sustainability of each student, to how one particular session works, to how activities in each approach affect levels of students' participation, challenge and understanding, and so on. Most of the data are qualitative in nature and can be reviewed with qualitative data analysis computer software. Themes of analysis codes include education approaches, views of teaching and learning, dimensions of sustainability pedagogy, environmental ethics, aspects of sustainable design, to name a few. The analysis is still in progress at the time of writing.

Table 3: Summary of data collection at this institution

Sources of Data	Participants	
Pre-test	19 students (identified)	
Reflective diary	14 students (anonymous, with code names)	8 students (identified)
Post-test	22 students (identified)	
Focus group	8 students (identified)	
Students' assignments	22 students (identified)	

INITIAL FINDINGS AND CONCLUSION

Regarding this study's key question "Is transformative pedagogy for teaching sustainability to design students in Thailand is necessary?", the initial findings based entirely on the learners' point of view evidently identify an emerging positive direction. The pre-test reveals that 18 out of 19 students held an anthropocentric view towards nature. The conflict between Buddhist culture and the anthropocentric views expressed by the students is outstanding. Then the post-test shows their significant shift away from the anthropocentric view, coupled with a more critical awareness of their role as designer in relation to complex sustainability issues. The reflective diaries present that most students found the curriculum interventions in general 'fresh' and 'fun', although they felt awkward at the few first sessions because of the unfamiliar teacher-student relationships and teaching styles. A number of students expressed that they enjoyed learning through dialogue but still prefer to be spoon-fed with 'the right answer'. This is clearly a cultural-specific characteristic as Thai students are familiar to receiving

fixed knowledge. Via the focus group discussion, all volunteered participants agreed that the curriculum interventions were effective, thanks to the easy-to-understand content structure. Most of them pointed out that their most favourite learning experience was Deep Ecology in session 2 (a transformative learning activity that asks the students to have a very close observation of any selected tree in the campus, in order to understand ecological literacy and develop empathy for non-human life forms). The reasons given include that they felt 'very challenged', the approach was 'unexpectedly unconventional', it triggered them to think critically without feeling forced, and it helped form their environmental-oriented design ethics.

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