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THE SOCIOCULTURAL CONTEXT OF HIGHER EDUCATION IN VIETNAM: A CASE FOR COLLABORATIVE LEARNING IN PHYSICS COURSES

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ABSTRACT

This article presents an analysis of the sociocultural context of the education system in Vietnam, specifically in terms of the cultural and philosophical dimensions of society, the development and influences of higher education, and the identity and worldviews of the Vietnamese people toward teaching and learning. The analysis focuses on the fit between the sociocultural context of Vietnamese education and the use of collaborative learning approaches in post-secondary physics courses, making the case that such innovations in physics pedagogy would be amenable and appropriately challenging to students, not only in terms of the enhancement of critical thinking and active learning, but also in terms of providing opportunity for the development of moral character and national identity.

Keywords: School Reform, Higher Education, Collaborative Learning, Curriculum Studies

INTRODUCTION

Research on education cannot be separated from the sociocultural context in which it takes place. The historical background and the culture of any society greatly influence developments and innovations in its education system. Vietnam is one among the Confucian-heritage and Buddhist countries in Asia. In the West, influences of Confucianism and Buddhism on Vietnamese education have not been well analysed compared with those in other Asian countries (e.g., Watkins & Biggs, 1996). In Vietnam, research on the influence of Confucianism and Buddhism on Vietnamese thought and social behaviour has gained attention in recent decades. However, how these two philosophies contribute to the Vietnamese perception of education and to educational values and practices in Vietnam has yet to be fully explored.

An important aspect of implementing teaching innovations and new learning styles and strategies concerns how students' sociocultural backgrounds contribute to the way they approach learning. The purpose of this paper is to explore the dominant

influences of Confucianism, Buddhism and the Vietnamese traditional culture on teaching and learning behaviour in Vietnam, and in particular on the collective and collaborative characteristics of Vietnamese people. On this ground, historical influences on Vietnamese physics education are interpreted and analysed.

Historical background: Vietnam is a Southeast Asian country with a unique history along with its 4000-year existence (Dang, 1997, p. 359). With a land area of 332,000 square kilometres Vietnam has plains, mountains, seas, a continental shelf, and rich and varied natural resources. The natural conditions are essentially favourable for the building of an independent, sovereign and multi-faced economy. Vietnam has a population of approximately 80.3 million (2000), some 80 percent of whom live in rural areas, and the population growth rate is 2.3 percent per annum (Asia Week, November 3/2000, p. 79). Buddhism is the most important religion, and there are also Catholics, Confucians, Taoists and some other minor religious groups. The Vietnamese people are recognised as being industrious, intelligent and creative and are endowed with a great capacity to master scientific advance and new techniques. Being affected by successive wars and natural disasters, Vietnam still remains as one of the poorest countries in

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the region, with a per capita GNP in 2000 of USD 370 (Asia Week, November 3/2000, p. 79).

According to earliest Vietnamese literature, the founder of the Vietnamese nation was Hung Vuong, the first ruler of the Hung dynasty (2879-258 BC, mythological dates) of the kingdom of Van Lang. Vietnamese scholars associate the Hung dynasty with Dong Sonian culture. An important aspect of this culture by the 6th Century BC was the tidal irrigation of rice fields through an elaborate system of canals and dikes. The last Hung king was overthrown in the 3rd Century BC by King An Duong, the ruler of the neighboring kingdom of Thuc. King An Duong united Van Lang with Thuc to form Au Lac, building his capital and citadel at Co Loa, thirty-five kilometers north of present-day Hanoi. Au Lac was then combined with other territories in southern China and northern Vietnam by Trieu Da to form Nam Viet, which included a part of what today is Vietnam (see Cima, 1989 for relevant maps).

The Chinese invasion of Vietnam started in 111 BC when the Han dynasty sent an expeditionary corps to conquer the kingdom of Nam Viet. Resistance by the Vietnamese against Chinese imperialist domination grew from time to time, finally leading to the Bach Dang victory led by Ngo Quyen (who was then a king of Vietnam) in 938. This victory put an end to the period of Chinese imperial domination. Thus, after a long period of subjugation by the Chinese feudal empire, marked by numerous insurrections, the Vietnamese people finally won back their independence. Although the Chinese were unsuccessful in assimilating the Vietnamese totally, the Chinese did exert a permanent influence on Vietnamese administration, law, education, literature, language, and culture (Cima, 1989). In the period of Chinese control, Confucianism and Taoism were introduced and retained an important role in society and family life in Vietnam.

During the period of Chinese dominance, other cultural influences also reached the shores of the Red River Delta of northern Vietnam. A thriving maritime trade among China, India, and Indonesia used the delta as a convenient stopover. Among the array of goods and ideas thus brought to Vietnam was Buddhism from India. By the time the Ly dynasty (1010-1225), established itself in the Red River Delta the outlines of Vietnamese identity were relatively clear. Successive dynasties ruled an independent Vietnam for almost nine centuries until the French invasion in the 19th Century. During this period, the most impressive

victory of Vietnamese people over foreign enemies was the defeat of the Mongols in 1257, 1284, and 1287. By 1225, the Mongols controlled most of northern China and Manchuria and were eyeing southern China, Vietnam, and Champa. The 3rd Mongol invasion of 300,000 men was defeated by the Vietnamese under the leadership of General Tran Hung Dao.

In 1858, French naval forces landed at Da Nang, beginning almost a century of French colonial rule in Vietnam. Many guerrilla movements were formed to fight against the French without any significant success. In 1930, the establishment of the Communist Party of Vietnam (CPV) initiated a rigorous period of rebellion, which led to the successful August Revolution in 1945. On September 2, 1945 the first Democratic Republic of Vietnam was proclaimed in Hanoi but the war against the French had to continue until France's ignominious defeat at Dien Bien Phu in 1954. The Geneva Agreement in that year divided Vietnam into two separate nations; the Democratic Republic in the north and a US-backed administration in the south. The 30-year war against the French and the Americans that concluded in 1975 caused many difficulties for Vietnam. The American embargo (from 1975 to 1994) and the reduction of the economic support from former socialist countries made these difficulties more serious.

After the reunification of the North and the South in 1975, Vietnam first pursued development as a socialist state-planned economy as determined by the CPV:

Under the leadership of the Party and the management of the proletarian dictatorship State, and in coordination with the revolution in the relations of production and the ideological revolution, we must try to bring about thorough-going changes in all the productive forces, in the structure of production, organisation and in the management of social economy, so as to develop the economy of our country into one of large-scale socialist production with growing labour productivity. (Vo, 1975, p. 14)

In this new stage of the revolution, science and technology were determined to be the bases for the country's development as the above quotation continues:

We should bring the key role of the scientific and technological revolution to the fore, make a considerable contribution to building the major part of the material and technical basis of socialism within 15 to 20 years, while shaping a modern Vietnamese science and

technology structured in a manner appropriate to our country. (Vo, 1975, p. 14)

But the system showed that it had limited ability to develop the economy. Attempts to develop a collective agricultural system with a centralised bureaucratic management failed. The problems were recognised and have been in the process of being resolved step by step.

In 1986 the Sixth Party Congress adopted a renovation program for social and economic reform. Known as "Doi Moi," this program has resulted in the economy undergoing a rapid transition. The aim of this transformation was "to continue with the abolition of a system based on bureaucratic centralism and state subsidies, to establish harmoniously and conduct efficiently the State-controlled market system" (Lam, 1997, p. 32). The renovation accelerated in 1989 when further economic measures were introduced with the aim of taking Vietnam from a centrally planned to a "free market" or mixed economy. After ten years of implementation, the reform has really taken effect in changing the economy and social life and especially the international relationship between Vietnam and the rest of the world. However, the rapid change of the world and its ever-growing economic globalisation still put Vietnam in the position of facing tremendous struggles in every aspect to narrow the gap between Vietnam and the rest of the world economy.

Vietnamese education: Chinese culture had great influence over Vietnam during its hegemony of almost one thousand years (until 10th Century AD). According to Doan (1971), education in this period was confined to the sons of mandarins or government officials. There were private, village schools where local scholars taught young boys writing and reading Chinese characters. In the provinces, there were government schools with formal education, which prepared students for highly competitive national examinations. Successful candidates from these examinations were likely to be government officials in villages or provinces.

The language used in ancient Vietnam during the prehistorical period (about two thousand years before the Chinese domination) is unknown. During the Chinese hegemony, Chinese characters were introduced and Chinese was accepted as the official language. In the 13th Century, Chu Nom (vernacular language) was invented among the Vietnamese literati and then frequently used by many mandarins and scholars. This language was "formed either directly from Chinese

characters or from combination of these to represent the Vietnamese spoken language" (Doan, 1971, p. 5). Between the late fourteenth and late eighteenth centuries several Vietnamese monarchs ordered that chu nom be used for administrative and educational purposes, but these monarchs did not remain in power long enough to ensure implementation. Because there was not much effort to standardise its character usage, Chu nom was then replaced by the Chinese in the succeeding dynasties (Doan, 1971). The present Vietnamese Romanised language was invented during the 17th Century primarily by the French Jesuit Alexandre de Rhodes, who came to Vietnam as a missionary. This language has been used popularly since 1861 when the French set up a printing press to publish materials in Vietnamese script based on Roman characters as well as in French (Marr, 1981). However, French continued to be the official language and was used for instruction at French-based schools during the colonial period.

The traditional system of education was continued under French rule until 1917/18. However, during the period of French rule (from 1883 to 1954), French education was gradually imported. Initially it co-existed with the traditional education, but eventually became totally dominant. French became the medium of instruction at all levels, and the study of the national language and history of Vietnam was downgraded accordingly (Nguyen, 1993). In 1917/18 the French formally implemented a school system, which was uniform throughout all of Indochina (Laos, Cambodia and Vietnam). This system was the basis of school education in Vietnam until 1952 (Department of Employment, Education and Training, 1993, p. 4). Although the country was a French colony, official schools in Vietnam did not teach French culture at all but mainly French interpretations of Vietnamese culture and society (Weinberg, 1997, p. 130).

Under French rule, education in Vietnam was severely limited. In 1920, enrolments in post-primary schools only made up 1.9 percent of the entire student population. Eighteen years later, this figure fell to 1.8 percent. During the school year 1929 to 1930, only 397 students in all of Vietnam and Cambodia attended higher primary schools (Weinberg, 1997, p. 131).

Before the 1945 August Revolution, 95 percent of the Vietnamese people were illiterate. In places where there were primary schools, 97.2 percent of the women were

illiterate, and where there were no schools, the figure was 99.8 percent. After 1945, and the proclamation of the Democratic Republic of Vietnam, the educational system began to develop and the Vietnamese language, for the first time in the four-thousand-year history of the nation, became the official language not only in daily use but also at school, in the teaching of all subjects. Between 1946 and 1950, there were big movements in which thousands of volunteers came to villages to teach people how to read and write in Vietnamese. During this time, 10 million more Vietnamese joined the ranks of the literate while the fight against the French was underway (Weinberg, 1997, p. 133).

The first reform of education was undertaken in 1951, in the thick of the resistance against French aggression, and the aim was to replace French education by a Vietnamese system. The second education reform in North Vietnam started in 1956. This reform followed the revolutionary line of the Vietnam Workers' Party (now CPV), and adopted a combination of studies and production work as its training method. The Third National Congress of the Party, in 1960, defined the line and the principles of education in Vietnam as follows:

Education must always closely follow the line and orientation of the Party's political tasks, and endeavour to train new men able to meet the requirements of each revolutionary stage; education has become the revolutionary undertaking of the masses, the principles of socialist education, the combination of education and productive labour, of theory and practice, of studies and their application, of education at schools and education by society, the preoccupation with linking school to life, and production to fighting. (Ho, 1975, p. 75)

In January 1993 the 4th Plenum of the full Central Committee (7th term) of the CPV met and, among other considerations, undertook the most comprehensive review of education and training since 1945. At this meeting, a decision concerning the continuing renovation of education and training was issued by the Central Committee on 14 January 1993. Within this decision, major orientations and measures for the development of education and training in Vietnam in the near future were indicated as follows:

- Improvement of the structure of the national education system;
- Reorganization of the system of schools, colleges, and universities;
- Eradication of illiteracy;

- Improved linkages between general secondary education and vocational education;
- Expansion of vocational education and training;
- Rational increases in higher education enrolments;
- Redefinition of objectives for education and training, redesigning of curricula, improvement of education and training methods for every level of education and training;
- Promotion of research and extension activities in universities and colleges;
- Consolidation and development of education and training activities in ethnic minority regions and areas with economic difficulties;
- Strengthening of educational management by the government and Party organization;
- Upgrading of the teaching and managerial staff;
- Renovation of educational administration. (Le & Sloper, 1995, p. 12)

In December 1996 the 2nd Plenum of the full Central Committee (8th term) of the CPV met and evaluated what had been done according to the above orientations. As reflected in the Resolution of this meeting, the school system during 1992 and 1996 had been improved widely in rural, highland, and off-shored areas. There was an increase of 1.25% of school students and 2.7% of college and university students during these years. However, there were 9% of the Vietnamese still illiterate and just 10% of the workforce received job training. In addition,

the quality and effectiveness of education and training are still poor. Most students have poor knowledge, practical skills, and scientific reasoning mind. ... Many university graduates cannot adapt to the requirements and the ever-changed development of workplace and technology. (Resolution of the 2nd Plenum of the full 8th-term Central Committee of the CPV)

Higher education in Vietnam did not begin to receive official attention until the end of the eleventh century. In 1070 Van Mieu (Temple of Literature) was built in the capital for Princes to be educated. In 1076 Quoc Tu Giam (School for Royal Sons), the first Royal College in Vietnam, was established by King Ly Nhan Ton (Dang, 1997, p. 359). The learning materials were the classical texts on Confucianism and were all written in Chinese. In 1253, the National Institute of Education (Quoc Hoc Vien) was constructed to be used as a place for the King to discuss with high mandarins the classic books of Confucius. The first university in Vietnam, the Indo-

Chinese Institute of Higher Learning (Dong Duong Cao Hoc Cuc) was founded by the French in 1907 in Hanoi but it was completely closed down less than a year later (Department of Employment, Education and Training, 1993) except the School of Medicine and Pharmacy (Doan, 1971, p. 290). This school later became Hanoi Medical University.

In 1917/18 the Indochinese University was founded in Hanoi and it was the only French-style university in Indochina during the French rule. This university was renamed as The University of Hanoi in 1949 (Department of Employment, Education and Training, 1993). Since the August Revolution of 1945, and especially after the victory in the war of resistance against the French in 1954 (which was followed by the partition of Vietnam into two countries in 1955), the number of colleges and universities increased vigorously in both North and South Vietnam. The strongest influence in the higher education system in the North was from the Soviet Union, which contributed substantial aid and Russian became the main foreign language taught. In the South, the major influence came from the United States through aid and academic personnel. In 1975, in North Vietnam, there were 30 higher education institutions (including colleges and universities) with 8,400 teachers and 56,000 students. Meanwhile in South Vietnam, there were seven public universities and seven private universities and colleges, with 166,000 students (Dang, 1997, p. 362). Since 1975, after the reunification of the whole country, all colleges and universities in Vietnam have been united into one system. In 1999, Vietnam had 139 universities and colleges with around 800,000 students and 28,000 teachers (MOET, 1999). The Vietnamese higher education system is currently under a restructuring process in which new local community colleges are established and smaller or mono-disciplined universities are amalgamated.

Buddhism, Taoism, and Confucianism combine to form the underpinnings of the Vietnamese culture. Among these, Confucianism and Buddhism have remained important influences on the Vietnamese culture until now (Pham, 2000). In education, however, Confucianism has had the most significant impact (Tran, 1995). This section attempts to identify these influences on the Vietnamese perception of education. These religions or philosophies (both are used in Vietnamese language), combined with national and historical

characteristics, form the traditional values of the Vietnamese people.

Influences from Confucianism: Confucius (551 - 479 BC), the founder of Confucianism, has been seen as the most eminent philosopher of the Chinese people and is popularly known around the world. His philosophy "has for these 2,500 years summed up and included in its system nearly all that is good in the original Chinese cultural heritage, and has from time to time assimilated and absorbed good elements from alien systems, thus constituting what we have in Chinese civilization" (Jingpan, 1990, p. 7). Confucianism is an extensive philosophical system of cultural and social ideals, political principles, moral codes and educational theories. For centuries, it has influenced the development and social structure of many East Asian countries.

Confucianism was introduced to Vietnam with the invasion of the Chinese empire in the first century. At that time, Confucianism was accepted as a national philosophy in politics, education, and social life of the Chinese people. It had maintained an important role in establishing and maintaining a stable and hierarchical society in China from the sixth century BC. When the first feudal governments (typically the Ly and Tran dynasties, from the 11th to 14th Centuries) were established in Vietnam, during the period of national independence, Confucianism continued to be considered as an ideal philosophy for political administration and education (Tran, 1995). Van Mieu [Temple of Literature] was constructed in dedication to Confucius in Thang Long (Hanoi today). Books written in Chinese with Confucian content were used to educate the Vietnamese elite and also pupils in the village schools for hundreds of years. Confucian moral values were practised and seen as "standards" in governmental administration, in social interaction, and also in Vietnamese families.

Confucius' philosophy aims "to bring about social reforms through educating individuals of society; to put forth an ideal social order through cultivating ideal ways of life and full development of the personality of the individual" (Jingpan, 1990, p. 175). Individual development and an ideal social order were the two most important themes in Confucianism. According to Confucius, as recorded in The Analects (a written record of the sayings and deeds of Confucius and his disciples), there are two stages of the ideal life of an

individual; the highest stage of the ideal life, called Sheng Jen (Sage); and the intermediate stage, a stage of practical human ideals, called Chun-tzu (Superior Man). Whilst Sage seemed to be too ideal to practise and was used "to inspire people to press forward even more towards something higher and better" (Jingpan, 1990, p. 177), Superior Man was more a practical figure that Confucius would like any man to attain. For being a Superior Man, a man must cultivate himself and give peace to others. For cultivating one's self, a man must commit to moral, intellectual, and physical development. In order to give peace to others, a Superior Man "would love all people and regard them as his own brothers" (Jingpan, 1990, p. 188).

It can be seen that Confucius put emphasis upon the full development of an individual. However, Confucius was mainly interested in the moral life of men (Jingpan, 1990, p. 247). According to him, intellectual knowledge is useless and not worth teaching if it cannot contribute to the moral life of the individual. The moral teaching of Confucius is said to have been centred around the four main topics, -Jen (Love), Li (The rules of Proper Conduct), Hsiao (Filial Piety), and Chung Yung (The Doctrine of the Mean). Although Jen holds the greatest contribution of Confucius, Li has been practised as the most fundamental factor in the Confucianism moral teaching of Hsun-tzu (one of Confucius' eminent disciples) and his school (Jingpan, 1990, p. 310) and in social interactions at East Asia countries. To Hsun-tzu, Li (The rules of Proper Conduct) should be understood as the standard of all human action including individual activities and also operation of a government.

Man's emotions, purposes and ideas, when proceeding accordingly to Li, will be orderly. If they do not proceed according to Li, they become wrong and confused, careless and negligent. Food and drink, clothing, dwelling places and movements, if in accordance with Li, will be proper and harmonious. If not in accordance with Li, they will meet with ruin and calamity. A person's appearance, his bearing, his advancing and retiring when he hastens or walks slowly, if according to Li, are refined. If not according to Li, he will be haughty, intractable, prejudiced and rude. Hence man without Li cannot exist, affairs without Li cannot be completed; government without Li cannot be peaceful. (The Work of Hsun-tzu, translated by Homer H. Dubs, pp. 44-45, quoted in Jingpan, 1990, pp. 311-312).

Although the influences of Confucianism on the

Vietnamese character are deep-rooted, research on Confucianism and these influences had not been well developed before the "open stage" (1986 onwards) in Vietnam (Nguyen, 1997). In recent years, Confucianism has gained significant attention as being an important source of the Vietnamese tradition. Many Confucian values are believed to have contributed to the Vietnamese human development (Tran, 1995). However, there have been several controversies among Vietnamese educators and historians on these values. Tran (1995) summarises studies on the influences of Confucianism in Vietnam. According to him, Confucianism has imposed both positive and negative influences on the Vietnamese character that relate strongly to education.

Confucianism has developed in the Vietnamese people a fondness of learning and understanding, an eagerness of whole-life learning, and a spirit of social contribution. Confucianism also contributed to the Vietnamese people a system of flexible and proper conduct. ... Confucianism has developed in people a blind loyalty, an attitude of unchallenging, and a self-strict life style. It also made the Vietnamese people be mainly interested in repetitive learning and examination, and devalue practical activities... (p. 60)

But to Doan (2000), Confucius always encouraged effective teaching and learning strategies such as inquiry teaching, discussion methods; and he was interested in promoting understanding in learning and how to make knowledge become useful. This comment is similar to Jingpan's study in China. Jingpan (1990) devoted a large chapter in his PhD thesis (Chapter Six: The Methods of the Teaching of Confucius) to discuss the invaluable contribution of Confucius to teaching and learning. According to Jingpan (1990), Confucius always urged his students "to be doers and not hearers of learners" (p. 387) and encouraged them "to put his teaching into action" (p. 387).

At the individual level, the most significant contribution of Confucianism to the Vietnamese people is probably the spirit of self-cultivation. This spirit encourages people to always further their moral development, intellectual ability, and physical health. Morality and qualification are often the two most important factors to be considered for promotion in Vietnamese workplace. Morality in Vietnam is not a personal matter. It is really a matter of concern not only in education but also in social life and workplace. Confucianism has contributed

greatly to this Vietnamese tradition. This issue will be discussed in a later section of this chapter to below.

Influences from Buddhism: Historically, most Vietnamese have identified themselves with Buddhism, which originated in what is now southern Nepal around 530 B.C. as an offshoot of Hinduism (Cima, 1989). According to Nguyen (1996b) Buddhism was first imparted to Vietnam during the first century A.D. when Indian businessmen and monks came to Vietnam. But according to Cima (1989), Buddhism spread first from China to Vietnam's Red River Delta region in approximately the second century A.D., and then from India to the southern Mekong Delta area at some time between the third and the sixth century. Throughout the history of Vietnam, Buddhism contributed greatly to the nation's welfare and enriched Vietnamese culture. During the feudal dynasties (typically during the Ly and Tran dynasties, from 11th to 14th centuries), several eminent Vietnamese monks served as national advisors to the kings on important national matters (Thich, 1975). Buddhism was the national religion under some dynasties (e.g., Tran and Dinh's dynasties).

The philosophy of Buddhism matched with the Vietnamese character and tradition, therefore it was quickly accepted by the Vietnamese people. Buddhism is believed to play the most significant role in forming the Vietnamese lifestyle and their world outlook (Nguyen, 1996a). Almost every village in Vietnam has at least one pagoda that is established, protected, and cared for by the villagers. Going to the pagoda for praying or attending services has become a normal activity of many Vietnamese, especially the elderly. The Buddhist concept of morality and right behaviour, which has had strong influences on the Vietnamese, consists of right views, or sincerity in leading a religious life; right intention, or honesty in judgment; right speech, or sincerity in speech; right livelihood, or sincerity in making a living; right effort, or sincerity in aspiration; right mindfulness, or sincerity in memory; and right concentration, or sincerity in meditation. (Cima, 1989, p. 120)

One of the most significant values that Buddhism has developed in the Vietnamese people is Tu Bi, the spirit of humanitarian, open-heartedness, sympathy, and forgiveness. This spirit emphasises kindness and care among people. It discourages jealousy, selfishness, and individualism (Pham, 2000b). In regard to education, this spirit encourages collaboration among people in

doing something they think valuable to the others and to one's self. Individual competition is less preferred to the progress of all as the whole. However, Nguyen (1996a) argued that the belief in destiny/fate rooted from Buddhist philosophy, which views one's life being pre-defined by the Supreme Lord, can make many Vietnamese less interested in devoting themselves to challenging in life or changing the world around them.

Traditional role of teachers: In Vietnamese society, teachers have always been held in high esteem. Historically, this tradition began with the introduction of Confucianism in Vietnam. Confucianism was inculcated through education and has strongly dominated the Vietnamese culture. For thousands of years, teachers were the leading class, second only to the King, as exemplified in a popular motto in moral education; Quan-Su-Phu [King-Teacher-Father]. "Teachers of the past were more than political leaders; they were also the moral and spiritual models of the society" (Doan, 1971, p. 8). This role model of teacher can be seen even today in Vietnam and also in China where Confucianism was developed:

In the Chinese context, teachers are not only expected to know more than students, but they are also expected to act as examples in all the moral aspects. In the Chinese tradition, teachers are respected by the community not only because of their profession, but also because they are seen as those who should possess the ideal personalities. (Cheng & Wong, 1996, p. 36)

The dominant role of teachers is observed not only in Vietnam but also in other Asian countries where there are "Confucian-heritage cultures": China, Taiwan, Singapore, Hong Kong, Japan, and Korea (Biggs, 1996) as seen by some Western researchers:

[Asian students] tend to look on lecturers as close to gods. Often they are very reluctant to question statements or textbooks. (Samuelowicz, 1987, p. 124-125)

Hong Kong students display almost unquestioning acceptance of the knowledge of the teacher or lecturer. This may be explained in terms of an extension or transfer of the Confucian ethic of filial piety. Coupled with this is an emphasis on strictness of discipline and power behaviour, rather than an expression of opinion, independence, self-mastery, creativity and all-round personal development. (Murphy, 1987, p. 43)

In China, knowledge is not open to challenge and extension (by students arguing with their instructors)

[...]. The teacher decides which knowledge is to be taught, and the students accept and learn that knowledge. The lecturer is the authority, the repository of knowledge, leading the student forward into this knowledge, a respected elder transmitting to a subordinate junior. (Ginsberg, 1992, p. 6)

Stemming from this history, school students today are often reminded by their parents to “obey” their teachers. Arguing against teachers is often seen as an immoral behaviour. In society, teachers still hold one of the most honored places. Every year, Vietnamese celebrate Teachers’ Day on 20th November as a way to show their respect to the teaching profession. Compared with other professions, teaching has always been highly valued in Vietnamese society. Pham Van Dong, former Prime Minister of Vietnam and also a famous educator, often said: “Teaching is the most respectful profession among the respectful ones.”

Within classrooms or during lectures, Vietnamese teachers tend to make their lecture performance very formal and their role seems to be authoritarian. However, the relationship outside the classroom is normally quite different. In this environment, Vietnamese teachers often show high interest and willingness in helping students to improve their learning. An informal meeting at a university coffee shop or at a teacher’s home with a small group of his/her students is a popular feature of the Vietnamese educational context. On such occasions, students often feel free to raise any problems related to the subject or even to their personal lives.

The teacher-student relationship in Vietnam differs from the Western context in some basic respects. Western teachers seem physically much closer to their students in classrooms, their teaching approaches bear more on student activities, and teacher-student contacts are often limited to office hours. In contrast, Vietnamese teachers often perform a highly conventional role in classrooms but like to have informal and caring relationships with their students after class time. Vietnamese teachers at any level of education are expected to know a family’s status, the students and their personal problems. This understanding is believed to support teachers’ role in helping their students as contended by a university teacher in a study of Nguyen (2000, p. 90):

Teachers should know their students, student ideas, and student working methods, knowledge level and therefore help students’ progress. If there is a lack of

love in teachers toward students, they cannot work well with their students. Furthermore, based on Vietnamese tradition, teachers should also know their students’ family background, family situation and the difficulty students may have, so they can help them to overcome any obstacles.

Within the context of higher education, the role of teachers is less dominant than in primary or secondary schools but it is still an important cultural influence upon student learning. At any level of education, the student-teacher relationship is considered long lasting, as a Vietnamese teacher explained: “If someone is your teacher, he or she is your teacher for life. You are always in the role of student to that teacher” (cited in Sullivan, 1996, p. 34).

Traditionally, educated people receive the highest social status of all classes in Vietnamese society; “Si, Nong, Cong, Thuong” [Literati, Farmers, Artisans, Merchants]. Such an expectation really has a positive effect on motivating students in their learning. To many students, learning is thought of not only for themselves, but also for their families. On other hand, parents often have high educational expectations of their children. The highly respected role of teachers gives them moral authority over student behavior in addition to pedagogical concerns. This social esteem is an advantage for Vietnamese teachers compared with their colleagues in many Western countries. It is also a permanent stimulus to teachers to further their study and qualify themselves as the moral models of the society.

There are certain disadvantages of the traditional role of Vietnamese teachers that stem from their dominant place and position in society and in classrooms. Students are expected by their parents to get the “right words” from their teachers in class. Without teachers, learning is thought to be difficult as is exemplified by the popular saying: “Khong thay do may lam nen” [You cannot be successful without teachers’ instruction]. With such a perception, students (and even some teachers) often come to believe that listening to teachers and taking notes are the students’ sole responsibility during lectures. The relative scarcity of texts and libraries also strengthens this dependence. In addition, quiet and order are among the criteria of academic discipline at some institutions, especially at schools. As a result, students often feel “unaccepted” when they want to raise any problems during lectures, to argue a point with, or to make comments to their teachers. An

opinion of a university teacher interviewed by Nguyen (2000, p. 94) reflects this tradition:

Traditionally, Vietnamese students should respect their teachers. We should keep the tradition. They have to consider teachers as their father or older brother or their leader and keep these thoughts to themselves. That means, when they make comments on their teachers' work, they make comments on their father or brother.

The hierarchical order in the interaction of teacher and student is also structured in the Vietnamese language. For Vietnamese students, *thầy* [teacher (male)] or *cô* [teacher (female)] the second or third person pronoun has to be used in communication with teachers. This relationship also inevitably leads to a teacher-centered environment in any formal instruction because "in the context of the Confucius [sic] value system, respect goes along with obedience" (Nguyen, 1983, p. 108). Such kinds of relationship may cause some negative effects in developing understanding, creativeness, critical thinking, self-confidence and communication skills for students.

Presently, a slogan which can be seen in the staff rooms of most schools in Vietnam is: "*Moi thầy cô giáo là một tấm gương sáng cho học sinh noi theo*" [Every teacher has to be the model for his or her students]. Being rooted in the traditionally dominant and model role in educational environment, Vietnamese teachers actively seek opportunities to broaden their knowledge and qualifications, together with enhancing a moral life. A "good" teacher is generally expected to have "good" knowledge on his/her specialised field, "good" lecturing skills, and "good" morality (which commonly implies that a teacher needs to be a good citizen, to be a role model in social interactions and to have strong will in self-directed learning).

Multi-faceted student's development has long been a concern of Vietnamese education and for teachers of any subjects. At universities, the common mission is teaching and research as in Western universities, but "teaching" here means to develop in students not only knowledge and understanding but also health and morality (which commonly implies that a student needs to be a good citizen, observe proper social conduct and exhibit a strong will in their social contribution). To Vietnamese teachers, the development of students' morality is expected as their responsibility and, therefore, they can give guidance or requirements to their students on how to develop it during their teaching. While teaching appraisal at universities in

Vietnam emphasises mostly academic performances (include lecturing skills, lecture preparation, and research), a serious mistake in social behaviour (e.g., breaking of a law) may prevent a teacher from gaining any teaching award or promotion.

In recent years, teachers in higher education in Vietnam have been expected not only to improve students' knowledge but also to develop for students the methods of learning and enthusiasm of life-long learning (Hoang, 2000). Many educators have advocated a shift from "teacher-centred" education to "student-centred" education as a solution for improving teaching and learning quality (Thanh, 2000). However, how the shift may be achieved and how such reforms may be defended in the Vietnamese culture has not been studied adequately. In addition, recent teaching appraisal policies have not encouraged much the new potentials and the implementations of new teaching models. Therefore, effective teaching in higher education is still a matter of concern with regard to its criteria, how to perform to them, and how to evaluate them.

According to Confucius, education is not only important for personal development but also for society which requires educated people to be officials: "The officer, having discharged all his duties, should devote his leisure to learning. The student, having completed his learning, should apply himself to be an officer" (quoted in On, 1996, p. 27). Higher education in ancient Vietnam had two major purposes: "to develop the intelligentsia, and to select capable office holders. It was an education for leadership: to train political and moral leaders for the nation" (Doan, 1971, p. 8). Being educated has been seen as the most important thing for achieving social mobility.

In ancient Vietnam, students received even more consideration than those of today. Students who succeeded in their examinations were greatly respected in their own villages and were appointed mandarins and given posts at court. Girls in the past were very proud of marrying students as they expected their husbands and the family would benefit from the examination success. At that time, girls were expected to take care of their family and to work for the boys' learning. This tradition reflects in the following poem:

Gai thì giu việc trong nhà
 Khi vào ganh cui khi ra thêu thùa
 Trai thì đọc sách ngẫm thơ
 Dui mai kính sự để cho kịp khoa

[Girls look after the house, sew and weave; boys study,

compose poems, and prepare for their examinations] Although Vietnamese students today have great opportunities to learn from different cultures and education of the world, they are still strongly influenced by the Confucian heritage held by previous generations (parents, grandparents), who often live with them in the same family, and by their teachers. The three-generation family model is still very popular in Vietnam and it is believed to help preserve national traditions and moral values.

An important characteristic of ancient education in Vietnam was that "practical knowledge and skills were excluded from the curriculum" (Doan, 1971, p. 18). The goal of Confucian formal education focused on literacy and moral education. Such beliefs can still be seen to influence the career choice of school-leavers entering post-secondary education in Vietnam in recent years:

Among the trained graduates, 42% are technicians while 58% are diploma or bachelor engineers (in developed countries the relevant proportions are 82% and 18%). The enrollment at technical schools and colleges from 1990 to 1995: if 1 is the enrollment number for bachelor, the number for diploma is 0.83 and for certificate is 0.6 (the relevant number in other countries are normally 1, 4, 10). (Pham, 1998, p. 2)

Students at all levels of education in Vietnam are expected to learn not only academic matters but also morality. "Tien hoc le hau hoc van" [Learn the moral conduct codes first, then the literature] has long been a popular motto at all schools. Students' moral behaviours are officially assessed and recorded as part of their learning achievement at schools. The significant role of moral education is also seen in China: "In the Chinese tradition, a student with good conduct but poor learning is unfortunate; a student with good learning but poor conduct is unacceptable" (Cheng & Wong, 1996, p. 36).

Current learning approaches: One of the salient effects of the Vietnamese traditional education is that most people think that learning must go with examinations. In other words, learning must be aimed at earning some kind of degree or certificate (Hoang, 1999, p. 4). Otherwise, it can be seen as unsuccessful. Degrees and certificates have been seen as the major "products" of learning. This may be rooted in the tradition of selecting officials in government organisations and companies where applicants' qualifications are often indicated by their degrees or certificates. In Vietnam, examinations often emphasize

memory and factual information. Almost all examinations, from schools to graduate courses, require students to remember quite a lot from what they have learned in the subject. For instance, an examination in a Physics course may require its students to remember 40 or 50 formulae. Formula sheets attached to examination papers in Western exams are hardly ever used in Vietnam. As a result, students at any level of education have to spend much of their time trying to memorise what is being taught. Although there have been several studies which argue that "memorization could be used as an attempt to reach understanding in addition to understanding preceding memorisation" (Kember, 2000, p. 104), such a strong emphasis on memorisation does not encourage many active forms of learning among students. Because of such memory-based assessment, cheating has become more and more common in examinations.

In such an environment, teaching and learning seem not to foster understanding and knowledge but to support information consumption. Therefore, lecturing and taking note have become appropriate methods and a popular picture in all subjects and at all levels as criticized by Professor Hoang Xuan Sinh, an eminent Vietnamese mathematician and educator: "Up to now we only have one method of instruction from schools to graduate courses: teachers lecture, students take notes" (Giang, 2000, p. 10).

One of the salient characteristics of Vietnamese learners is their diligence (Hoang, 1999). This value is believed to exist long in the past and has been reflected through many popular stories in Vietnam. "Can cu bu thong minh" [Diligence can compensate for the lack of intelligence] and "Co cong mai sat co ngay nen kim" [A metal rod can be turned into a needle with hard labour] have long been the popular proverbs which many Vietnamese parents often use to remind their children to spend more time for their learning.

Vietnamese people are fond of learning. This characteristic is clearly rooted in the past tradition in which educated people received the highest social status and respect in society. During the Chinese and French invasions, only a small part of the population could access education. Since the proclamation of the Democratic Republic of Vietnam in 1945, most Vietnamese people have learnt how to read and write Vietnamese not only at schools but also at informal classes held by volunteer teachers. With much effort, between 1946 and 1950, 10 million more

Vietnamese escaped from their illiteracy (Weinberg, 1997, p. 133).

Vietnamese students today are recognised as diligent, intelligent and interested in learning, especially in mathematics and science (Hoang, 1999). Vietnamese student teams are often ranked near the top at the international Olympiad competitions on computer science, mathematics, physics, and chemistry. Table 1 shows the results of Vietnamese teams at the international academic Olympiad competitions held in 1999. According to Tuoi Tre [The Youth], a newspaper in Vietnam, in the year 2000 Vietnamese students won one gold, two silver, and one bronze medals at the International Olympiad of Chemistry held in Denmark (Tuoi Tre 13/7/2000), and were Group Champions at the 2000 USA Autumn Informatics Competition (Tuoi Tre 7/12/2000).

Table1. Results of Vietnamese teams at international academic Olympiad competitions in 1999

Subject	Host	Vietnam's rank
Computer Science	Turkey	1/65
Mathematics	Romania	3/82
Physics	Italy	11/65
Chemistry	Thailand	15/52

Collective identity: The collectivism of Vietnamese people includes a collective and collaborative lifestyle, the inter-dependency and caring spirit, and the attitude of “standing or falling together” (Pham, 2000). The history of Vietnam reflects a high level of collectivism and collaboration among people during the course of national defence and development. This lifestyle has long been one of the traditional qualities of the Vietnamese people (Do & Nguyen, 2000). Historically, Vietnamese society developed from systems of agricultural villages. Each village had its own verbal and non-verbal regulations besides the state laws. These regulations mentioned mostly the relationships among people within each family and within a village. Therefore, each Vietnamese person in such a village was connected to his/her community by mental, legal, and productive relationships with people around. In addition, Buddhism developed in the Vietnamese people the attitude of kindness and care among people; Confucianism taught them how to improve their moral and social conduct; Taoism emphasised the harmony between human and the universe. All these values have become embodied in the Vietnamese people in their

traditional collective and collaborative lifestyle. “La lanh dum la rach” [The good leaves must cover the bad ones], “doan ket la song, chia re la chet” [United we stand, divided we fall], and “mot cay lam chang nen non, ba cay chum lai nen hon nui cao” [One tree cannot make a hill, but three trees can form a high mountain] have long been the popular proverbs expressing the spirit of unity, of supportive, caring and collaborative relationship among the Vietnamese. In addition, Vietnam has long been a country threatened by flood and drought. For surviving such serious natural disasters, Vietnamese people have chosen the “community lifestyle” in which the local culture has emphasized the subordination of the individual to collective discipline of family and village. Both the family and the village have been relatively closed, corporate entities, self-reliant, and responsible for the action of their individual members. (Jamieson, 1993, p. 5) Traditionally when the Vietnamese refer to themselves they often use the term *dong bao* [people born from a single pouch]. This term was rooted from a popular legend in Vietnam in which the Vietnamese were descended from dragons and fairies. In this legend, Lord Lac Long Quan married Au Co, who after some time gave birth to a pouch filled with one hundred eggs, which each produced a boy. One day he said to his wife: “I am a dragon, you are a fairy. We can’t remain together.” He took 50 of his sons with him to the plains and coastal regions, while the others followed their mother to the mountains. One of Lac Long Quan’s sons inherited his throne and was the founder of a dynasty of 18 rulers known as Hung kings (2879-258 B.C.). Although the Vietnamese believe that the above story is just a legend, *dong bao* has continued to be used as a term to express their spirit of inter-responsibility and caring among them.

In Vietnamese life, in cities or rural areas, enhancing community relationship is always an important task of any family as proved in the saying: “Ho hang xa khong bang lang gieng gan” [The close neighbours are more helpful than the distant relatives]. Inter-responsibility and caring behaviours have also been the traditional values of the Vietnamese people when they work together. Pride and shame often have a collective or group-based meaning rather than individual as reflected in the popular proverbs: “Con sau lam rau noi canh” [A slug can spoil a whole pot of soup], “mot con ngua dau ca tau khong an co” [One ill horse can result in a whole herd not eating grass]. In recent years, Vietnam has

promoted a program in which “cultural communes” and “cultural families” are developed both in rural and urban areas (Pham, 2000, p. 176). This program aims to preserve and develop Vietnamese traditional values, especially the collective and collaborative lifestyle.

An important aspect of Vietnamese collectivism is that family is usually perceived as a basic social unit. It is considered as the best place to preserve, nurture, and develop the Vietnamese traditional culture. In a Vietnamese family both the pride and shame of each family member are shared by the rest. If there is any conflict inside the family it is often handled among its members without exposing it to “outsiders.” In contrast, if any family member attains great achievement, this would be publicised to friends or neighbours.

The practice of religion in everyday life, especially Buddhism and Catholicism, has contributed greatly to the collective and collaborative characteristic of the Vietnamese. Religious activities in Vietnam are often group-based or community-based. For instance, many people like going to pagoda or church for praying in groups; mental or financial aids are often called within a religious community for mutual helps or in national disasters. In addition, some religions have their own organisations for helping their believers be close together or for social work such as Gia dinh phat tu [Family of Buddhist believers] of Buddhism, which is similar to the Boy Scout organisation in the West.

Collective identities have been found to be common among the Confucian-heritage countries such as China, Japan, Korea, Taiwan, Singapore, and Vietnam. In these countries, collectivism and interpersonal dependency are highly valued and encouraged. Meanwhile, in Western cultures, individualism and independence are preferred. Ho (1993) uses the term “relational identity” among Chinese to refer to identity defined by a person’s significant social relationships. He used this term to contrast with Western conception of individual identity. In his work concerning relational orientation in Asian social psychology, Ho analysed several Asian cultures and concluded that:

The principles for guiding social action are as follows: a) collective or group interests take precedence over those of the individual, b) the fulfilment of external social obligations take precedence over the fulfilment of internal individual needs, and c) securing a place in the social order takes precedence over self-expression. (Ho, 1993, p. 250). In another work, Ho (1995) observed that for Asians

“individual identity tends to be interwoven with collective identity” (p. 117). This means, “each shares the pride that the group claims, and bears the burden of its collective humiliation” (p. 117). Lebra (1976) reported a similar collective identity among Japanese people. The collective identities of peoples in the Confucian-heritage countries seem to be influenced by the social relational aspects of Confucianism which are summarised by Bond and Hwang (1986, p. 216) as follows:

- Man exists through, and is defined by, his relationships to others,
- These relationships are structured hierarchically;
- Social order is ensured through each party’s honouring the requirements in the role relationship.

In summary, the collective identities of Vietnamese people are shaped by different sources. Confucianism and Buddhism contribute grounded philosophies for proper individual behaviour and social interaction, and the history and the social development of Vietnam has nurtured and promoted traditional collaboration among Vietnamese. These collective values have long been recognised as national traditions and embodied in social development strategies in Vietnam.

Collaborative spirit for moral education: The emphasis on giao duc dao duc [moral education] at all school levels and in higher education in Vietnam can be seen as a heritage of Confucianism and it has been confirmed in the Education Act (National Assembly, 1998). “Good morality and good academic performance” are common aims at all educational levels in Vietnam. A university student with an “average” or “weak” morality may find difficulties in advancing his/her learning or in applying for a job in the future. However, there have not been clear definitions of “good morality” for different levels in Vietnamese education. V.V. Pham (2000), in his popular textbook—Pedagogy, discussed the objectives of moral education in Vietnam as follows:

Moral education should promote in individuals recognition of moral values; practices of right actions, equality, and humanitarian; and sense of contribution and sacrifice for others, for one’s family, for social development, and for the prosperity of the nation. (p. 157).

The history of Vietnam and its culture, as presented in this paper, points to how the history of Vietnam and its culture, as presented in this paper, points to how the collaborative spirit of the Vietnamese people collaborative spirit of Vietnamese people should be

regarded as one of the most important moral values which needs to be nourished at all levels of education. At school levels in Vietnam, moral education is a compulsory subject in primary and junior secondary schools. At these schools, five recommendations made by former President Ho Chi Minh have been seen as the common moral values for students. To President Ho, all students should:

- Love the country, love the people
- Have excellent collaboration and discipline
- Have excellent learning and labour
- Have excellent hygiene
- Be modest, honest, and courageous

The term “collaboration” [doan ket in Vietnamese] here emphasises the conformity of each student toward his/her peers and collaboration among them. However, teaching approaches that can foster this value among students have not been popular at most Vietnamese schools.

Moral education is not a separate course at higher education level in Vietnam but integrated in the teaching of any subject. As mentioned above, what moral education means in Vietnamese higher education has not been elaborated. However, through several educational agendas moral education in Vietnamese higher education is likely to emphasise the following:

- Relationship factors: humanitarian, caring and collaborative attitude.
- Political factors: respect of laws, social and community contribution, love of country and the people.
- Self-development factors: civil behaviour, proper speech, learning motivation and attitude, honesty, self-esteem, and self-directed lifestyle.

Specially, the need for enhancing Vietnamese traditional spirit of collaboration has been confirmed in a higher education agenda (Nguyen, 1998). However, teaching practices in general have not proved to fulfil many of the above purposes. Many teachers at Vietnamese higher education institutions find it difficult to fulfil their moral education responsibility at the same time as their subject teaching. Vietnamese traditional values, especially the collaborative spirit, seem not to be directly fostered in university students (Pham, 2000). Extra-curricula activities that promote students’ collaboration have not been developed in many universities. It has been observed that many of the Vietnamese youth today are abandoning collective and

collaborative traditions. They “prefer individual or family-based benefits to social or community welfare” (Do & Nguyen, 2000, p. 24). Without an appropriate moral framework in the education system, such a tendency would undermine the cultural identity of the Vietnamese society.

Since January 2001 many universities and colleges in Vietnam have started a pilot program initiated by MOET in which students’ “moral behaviours” are assessed and graded by a student-and-staff committee in each institution (MOET, 2001). The assessment result contributes to the GPA (grade point average), the “graduation score,” of each student. The purpose of this program is to enhance students’ learning motivation and morality. There are five factors that the assessment is based on:

- Learning commitment
- Citizenship and social relationship
- Ability to abide by institution’s regulations
- Participation in social and extra-curricula activities
- Participation in institution’s and student organisations’ activities

The above factors, however, do not represent a framework for moral education in Vietnamese higher education. They are indexes of moral behaviour that MOET believes can be assessed by institutions.

In Western countries, educational achievement is focused on academic grades. At the post-secondary level, moral education is generally not practised as Mitias (1992) observes, “We do not send our children to college in order to learn how to act morally but to acquire expertise in certain types of knowledge or skill, such as psychology, engineering, physics, law, or biology” (p. vii). According to Mitias (1992), it is almost impossible to establish a moral agency that oversees and manages the moral life of university students in a pluralistic society. The moral life of university students tends to be treated as “private” matter in Western countries. However, values education has gained much attention in many Western higher education institutions (e.g., Collins, 1983). For instance, cooperative or collaborative learning approaches have been implemented in many university classrooms, as a way to enhance students’ cognitive and social skills and their positive interdependence.

In Vietnam, individual morality is expected to conform to social orientation and commitment. In order to attain this purpose, moral education has been considered as a

substantial part of education and a conscious goal of any schools or higher education institutions. Moral education in Vietnam has been regarded not only as a vehicle for assisting young people to clarify their goals and to live in harmony with others but also as a means for strengthening national solidarity. With such purposes, collaborative spirit should be seen as an important element of moral education in Vietnamese education. Hence, practices of any form of collaborative learning amongst Vietnamese students could be seen as a practical approach to moral education in higher education. The teaching approaches explored in this study have attempted to cover this value by establishing an environment in which students can collaborate and socialise in their learning.

Physics education: In the field of physics education in Vietnam, the aims of physics education, the design of the curriculum, textbooks, modes of teaching and testing have been greatly influenced by the traditional culture and also the foreign impacts that were dominant in Vietnam in the past.

Similar to other subjects, the Vietnamese tradition in physics education emphasises both students' intellectual and moral development. Teachers are often reminded by their universities to help develop in students not only knowledge but also "morality" which mainly includes educational moral codes and responsibility (e.g., showing respect to teachers, not cheating in exams, developing passion for learning and concern to make a social contribution, etc.). Vietnamese teachers are frequently asked by social leaders to be a role model for their students both morally and intellectually, not only within their institutions but also in the society. Although in principle the higher order cognitive skills of the West are also encouraged during the physics courses, teaching practices tend to emphasise recapitulation of established knowledge and rules. Social skills such as communication, presentation, and teamwork skills, despite recent encouragement from MOET and desires from the workplace, are also hardly recognised. Physics teaching and assessment tend to focus on factual recall.

Vietnam has implemented a centrally controlled education system. All the major decisions on education come from MOET (on behalf of the central government). In physics education at school and university general education levels, curriculum and major textbooks are designed and published by MOET. Such an implementation can ensure a common provision within

schools and universities and allow students to be transferred easily from one school or university to another, but it can also limit teachers' thinking in curriculum development. Research in physics education in Vietnam focuses on monitoring teaching through assessment modes rather than on learning, curriculum design, and pedagogical innovations.

Confucianism emphasises intellectual and moral development through education. As a result, practical knowledge and technical skills are seen as trifling qualities and not necessary to be learned by educated people (Lingbiao, 1995, p. 261). This is extremely harmful to physics education, and to science education in general. In the national school physics syllabus, the fostering of experimental skill is one of the major aims but is not actually practised. Many schools in rural areas and even in cities do not cover physics experiments. Physics learning has become solely book learning in most of secondary physics education. At universities, experimental physics is designed in separate courses. This arrangement leads to disconnection between theoretical and experimental teaching and fragments student learning about the nature of science, but at least it can ensure the existence of the experimental part of physics education. But in the theoretical physics courses, data collected by the researcher at several major universities in Vietnam revealed that very few physics teachers used practical activities, such as demonstrations, in their teaching. A theoretical physics course is taught as a purely theoretical construction. This means practical applications and experiments of physics are rarely incorporated in lectures. A similar situation can be seen in China, a Confucian-heritage country:

Chinese tradition attaches great importance to theoretical knowledge. In deciding on the content of the physics course, teachers pay much more attention to the essential physics concepts, principles and laws. They do not like the idea of using everyday problems or applications as a scheme or basis for the physics course. (Lingbiao, 1995, p. 261)

Major textbooks of introductory physics course have significantly changed in recent decades. In the 1980s' the major IPC textbooks were from the USSR among which Physics: A General Course written by Savelyev (1981) was the most used. After 1990, however, the major reference recommended by MOET has been Fundamentals of Physics written by Halliday, Resnick, and Walker (1998). This textbook has been translated

into Vietnamese and published for popular use in physics classrooms in Vietnam. The preference for the American textbooks over Soviet ones may be that the former emphasise achievement in applied physics more than the latter. In addition, Soviet textbooks tend to emphasise more of the computational processes that can be a burden for most non-physics major students.

Within the Vietnamese tradition students see their physics teachers as the source of all physics knowledge and also as moral models. Physics teachers are expected to be able to explain or clarify most physics phenomena. Consistent with the dominant social-moral role of teachers, lecturing has long been the accepted mode of instruction at all institutions (Giang, 2000, p. 10). During lectures, students are not expected to query any teachers' words or to raise any problems to discuss with their teachers or their peers. This form of "order and discipline" can be seen in many Asian classrooms, as observed by a Western educator in Chinese university classrooms: "Lectures are very formal; students never speak and even refrain from correcting obvious errors made by the lecturer" (Strassenburg, 1984, p. 457).

Vietnamese students are influenced by stories of student hardship and sacrifice for learning that are told to them from an early age. Rote learning of basic physics concepts, principles, laws and even formulas is normal and it is fostered by current assessment practices. The following excerpt quoting the theoretical part of an introductory physics course exam paper used at a university in Vietnam (the rest of the exam included two problems) can be seen as a typical of assessment that fosters a rote learning approach. To answer these questions, students mainly needed to memorize the appropriate sections of the textbooks. Critical thinking was much less emphasised.

Write out Newton's laws of mechanics. Why is Newton's Second Law called the basic law of dynamics?

Present Young's double-slit interference experiment. Prove the formula used to measure the distance between two adjacent fringes.

Collaborative learning communities: Although Confucianism has been imparted in Vietnam for thousands of years it is still reflected in many aspects of the Vietnamese life, especially in education. Buddhism, which served as the religion of most Vietnamese, also persists in Vietnamese thought and behaviour. The analyses in this paper have attempted to present the general effect of such influences on teaching and

learning and also on the social perception of education in modern Vietnam. This is the context in which this research seeks to interpret the problems that may emerge from the implementation of teaching approaches that emphasize dialogue and collaboration in the Vietnamese context.

The analysis of the culture and traditional values of Vietnamese people supports a belief that the implementation of collaborative learning modes in Vietnamese classrooms is appropriate and fitting. Teaching Vietnamese students to learn collaboratively can be understood as way for improving not only their cognitive and social skills and understandings in physics but also their sense of a moral foundation for social and national consolidation and identity.

Collaborative learning can be theorized in terms of synergistic ecological education development. A learning community has a synergy—a life of its own so to speak—which allows it to flower and bear fruit, albeit often in unanticipated ways. This kind of unpredictability is a good thing because it brings about robust interconnections in the community and ensures that various people are developing initiative and taking ownership in creative ways. In the case of physics education, such a collaborative, student-centered approach would encourage the "science voices" of the students to emerge, which in turn would help them to develop deep understanding of the concepts of physics. Synergy carries with it synchronicity, serendipity and spirituality, which allow people to bring their beliefs and their moral ideals to bear upon their collective efforts.

The concept ecological gives rise to systemic ideas of inter-relatedness. Teaching and learning relations are typically thought of in terms of one person in transition—the learner: the learner is in transition from a state of not knowing to a state of knowing. The teacher allows the transition to occur, but does not undergo any kind of change. But if one thinks in ecological terms then the teacher, the learner and knowledge itself are in a process of formation—teaching, learning and understanding are all transactional events. There is something to be taken from each exchange by all partners—nothing is wasted. This theoretical infrastructure can provide the foundation for implementing new ideas and innovations in physics curriculum.



Figure 1. Representation of a learning community.

The image presented in Figure 1 portrays an idealized view of learning communities, which has been shaped by the authors' experiences in educational reform in South East Asia. It is a pattern taken from the balcony of a youth center in Can Tho, Vietnam. This is the pattern in the hand railing around the balcony—that of a chain or circle of paper dolls alternating large and small in a form that can be seen as a flower blossom. The significance of the flower blossom is not only to represent the collective as a living system but to remind us that the seed is within each individual blossom, each person. This image captures the idea of mutual support for growth vis-à-vis preparing for the next generation, representing some of the ecological insights that could serve as metaphors for understanding the dynamics of collaborative learning and learning communities.

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