

International Conference
Developing skills for the New Economy

17 – 19 October 2002, Winnipeg-Manitoba, Canada

**THE ROLE OF INFORMATION COMMUNICATION
TECHNOLOGY IN TECHNICAL VOCATIONAL EDUCATION &
TRAINING AT THE 21ST CENTURY IN VIETNAM**

THAI THANH SON, THAI THANH TUNG
Hanoi State Open University

In the last few decades Vietnam had to endure the consequences of a 30 years long war time the 1st Indochina war (1945-1954) and the 2nd Indochina war (1960-1975), and then another heavy consequence of a long economic embargo (1975-1990). Up to this day, Vietnam has still been considered one of the poorest and undeveloped countries in the world.

Some statistical data

❖ Total land area	330.000 sq. km
❖ Population	78.000.000 (1998)
- Proportion of rural population	# 80%
❖ GDP/ per capita	260 USD (1985), 360 USD (1998)
❖ Rate of GDP annual increasing	1990-1996: 9%, 1998-2000: 7%
❖ Rate of illiteracy	12% (UNESCO 1997)
❖ Tertiary and higher education institutions	156
❖ Student proportion over 10,000 inhabitants	150 (2000)

Vietnam is an agricultural country: 80% of the population live in undeveloped rural, mountainous and remote areas. Many of the mains export products: rice, coffee, tea, rubber, seafood.... Come from agriculture, forestry and fishing.

Besides of the potentialities of agriculture, fishing, tropical forestry and sylviculture, the national resource: gas and oil, coal, minerals... and also of the geographical position: more than 3000 km of seashores with many auspicious ports in the middle of international sea routes: Saigon, Vungtau, Camranh, Dungquat, Danang, Haiphong... and many famous places of scenic beauty: Halong Bay, Faisilung, Hoian, Danang, Poulo Condor... one of *the most important capital of Vietnam is its manpower resource* : millions and millions of laborious and intelligent Vietnamese with their tradition of learning and overcoming all difficulties.

However, *one of the biggest disadvantages of this manpower resource is the limitation of know-how, the shortcoming of basic education and skill training which may not adapt them with the actual social and economical conditions and situations - especially among the rural population.*

The low cultural level, the big gap of knowledge and know-how of the population is a great barricade on the way of the current socio-economical development in Vietnam.

Since the end of the 1980s, however the Socio-Economical Renovation (DOI MOI) in Vietnam has brought a lot of encouraging changes which enable Vietnam to continuously develop rapidly and steadily on the way to fitting into the community of the countries in the Asia-Pacific region and in the world as well.

The fast present socio-economic growth requires not only a relevant development in education and training in Vietnam but also great efforts and urgent needs which, due to constraints in national resources, can't be met by the traditional education and training sector of our country.

At the present time the development of human resource in general and of the well-trained skilled workforce in particular is of vital importance.

NEEDS FOR TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING IN VIETNAM IN THE NEXT DECADES.

In the forthcoming decades the Technical and Vocational education and training sector in Vietnam will have to address the following urgent needs.

1. Educating and training the yearly increasing number of youth.

At the current rate of population growth at 1,8 - 2,2 % per year, by the year 2010 in Vietnam there will be per year approximately 1,8 - 2,0 million new primary school children, 1,5-1,8 million new secondary pupils and 1,200,000 – 1,500,000 secondary school leavers.

In fact, due to constraints in geographical position and financial situation in the rural areas, mountainous regions of the North, the Highland in the Center and remote countryside in the South, yearly 15 - 25% children had to leave their schools before having finished studying at each level. And as a consequence, the limitation of know - how, the shortcoming of basic education and skill training of these generation of future manpower resource hampered the socio-economical development in these regions and aggravated the present difference of life levels between urban and rural areas.

2. Training the human resource in new technologies and practical skills for the economic development at present and in the future.

Actually in some remote areas, especially in the community of ethnic minorities, modes of production in agriculture, in livestock breeder or handicraft keep intact as in many decades before. More than 75% of manpower work in the areas of agriculture which produce only less than 35% of the total GDP of the country. In new economic sectors, the proportion of skilled workers to the total workforce is still very low in our country. According to the statistic of a recent survey carried on at the Faculty of Economics and Business Management - DANANG University (1998) this proportion is 23 % in the North, 18% in the South and only 8% at the Central zone of Vietnam [9].

To accelerate the socio-economical development in rural areas, our government took decision to install in some of these areas many new EPZ (Export Processing Zone) aiming to create new jobs for inhabitants of the region and therefore to increase their life level. The needs of well-trained workforce for these EPZ are very important. For instance, only for the DUNGQUAT oil refinery complex (a recent built EPZ in Quangngai province, one of the poorest region of Center Zone) by the year 2005 as many as 4,000 general engineers and 12,000 skilled workers will be needed, but with

the present situation of education and training, in 5 years Quangngai will not be able to provide even 5 -10% of these manpower's need!

3. Retraining and upgrading standardizing the working staff in national economy of all sectors: state own, private, foreign joint ventures.

Approximately 80% of workforce which are actually participating to all Socio-economic activities was trained formerly along different lines, nowadays they reveal Some inadequacies for the open - market economy and therefore should grasp new knowledge and technologies.

For example one of the standards for government officials and cadres of medium level is the ability to know at least one foreign language: the gap of foreign language skill is in fact a barrier on the way to communicate with the international community. To this end by the year 2010 we should provide basic and intermediate language training for millions of people.

Or in the area of Information Technology, in order to be able to integrate with countries in the Asia-Pacific region, the Vietnamese government has evaluated that, by the year 2005 we'll have to supply some 50,000 ICT specialists.

To cope with the above mentioned urgent needs with such limited resources of the country as currently, it is obvious that traditional modes of education and training can't be effective enough.

The development of "*traditional education*" (face-to-face education) requests a lot of material conditions: buildings and classrooms, facilities and equipment, teachers and staff members... In Vietnam actually in almost higher, secondary and primary education institutions, due to the shortage of classrooms, facilities and teachers students have to work in 3 different shifts daily: morning, afternoon and evening classes. To establish new schools, new colleges, and new universities in a short time is quite infeasible with the current situation of our national economy!

Furthermore, due to their poverty and their low income, a big number of young people in remote regions cannot leave their homeland to come studying in metropolitan centers.

The education and training sector especially TVET should find possible issues only in Open learning and Distance Education (OL&DE)

Only OL and DE, the cheapest and most flexible form of education is able to supplement the traditional forms in order to meet the requirements of Technical & Vocational Education and Training of the population and can contribute effectively to the present and coming socio-economical development in Vietnam.

TARGET GROUPS AND TRAINING CURRICULUM FOR DE & OL IN TVET.

Actually in the world target groups as well as training curriculum for DE&OL are very varied depending on different requirements and characteristics of each country.

In Vietnam the situation has also its own particularity.

Right after the end of the 1st Indochina war (1945-1954) in the first era of correspondence education we have always to deal with 3 different group of learners: young pupils and students at primary and secondary school level, adult secondary learners and mature in-service people.

1. DE aids traditional education:

Presently in Vietnam we have a great shortage in quantity and especially in quality of teachers for primary and secondary schools in the whole country but the situation is still worse in the rural and remote areas.

The bad consequence is that there is an evident difference of the cultural standards between urban and rural pupils of the same levels. In Vietnam, after graduated from 12 years high school for entering either a University or a Vocational College, students have to pass a National entrance competition. For a long time almost high school leavers who could pass these competitions are from big cities or urban centers; before 1975 the proportion of tertiary education students from rural origin were very low.

To cope with the requirement of rural young students, since 1985-1990, DE institutions in co-operation with the National Radio and the Channel 2 of the National Television, have set up and maintained many programs of DE through Radio and /or Television. In these programs, regularly every week experienced teachers from most prestigious institutions of the country were invited to present tutorial sessions, to summarize and to systematize subjects taught in secondary schools (3-6 programs per week, especially the time before national examinations)

There are also many systematical teaching programs for languages: English, French, Mandarin, Russian, Japanese, German... and for other sciences and techniques: mathematics, physics, biology, information technology.

These programs are of use not only for students but also for teachers in remote countryside as guide and help for their tasks.

In a few years these programs were providing to pupils from remote regions the opportunities to "make contact" with qualified teachers and reducing markedly the difference of cultural standards between rural and urban pupils.

In fact DE in Vietnam has brought a precious aid and constituted a great motive force for the development in quantity for education in rural area.

2. In-service training and degree formation

As mentioned above, each year in the whole country there are 800,000 – 1,000,000 high school leavers but only 15-20% of them can find the opportunity to continue full time studying in tertiary education, the other 80-85% have to find job in the labor market with or without some professional apprenticeship. After some times, many of them will be wishing to be trained systematically or to get degrees in order to ameliorate their social position and at the same time their life level.

Many other in-service people were feeling grave shortcoming in their previous training curriculum, which prevent them to adapt with the new socio-economical context. They are also requiring to be re-trained so that they could fulfil more efficiently their duties.

For this target group the opportunity of study can only be provided by in-service training and DE is a suitable form for realizing this training mode.

Distance Education and Open learning is the only issue which may provide opportunity to for people in the whole country regardless on their geographical location, their financial situation and their social position.

3. Non-degree formation and lifelong study.

A big proportion of mature in-service people: farmers in remote countryside, artisans in rural areas... do not require systematic training and/ or degree formation but in order to promote their production and to ameliorate their life and working condition, they have big needs of new know-how and new production skills.

Answering to these requests, DE institutions in co-operation with national Radio and Television have provides a series of popular scientific training programs: general knowledge on hygiene and medicine, in using fertilizer, in breeding and husbandry, in pisciculture, PC for office use, small reparations for electric and electronic items... traditional handicrafts...

These programs have attracted the attention of millions of people and have made a considerable contribution not only to the great task of poverty eradication but also to the amelioration of life condition and the cultural level raising of the population in rural areas.

We may consider some great achievements in agriculture in Vietnam were more or less influenced from these popular scientific training programs: the development of seafood feeding, the VAC model in agriculture (model of enclosed farm: V= garden, A= pond, C= stable); the regenerate of traditional carving and embroidery etc...

DE is an efficient tool for the realization of the principle of lifelong study answering to the aspiration of the population in continually enriching and updating their knowledge and their labor skills.

OBJECTIVES OF EDUCATION AND TRAINING IN VIETNAM AT PRESENT TIME.

In order to meet big and urgent needs of education and training in the forthcoming period, the government of Vietnam has set up the 3 following objectives for the education and training:

- 1. Improving the public culture level** (NANG CAO DAN TRI) this can be compared with the formula: “*Learning to know, learning to live together*” in the well known Jacques Delors’ report: “Learning - the treasure within”[1]
- 2. Training human resource** (DAO TAO NHAN LUC) this can be roughly understood in the same way as in Jacques Delors’: “*Learning to do, learning to be*”
- 3. Fostering young talents** (BOI DUONG NHAN TAI) this objective is very significant for the development of a prosperous Vietnam nation in the future.

To realize these 3 objectives, especially the 1st and the 2nd, the government of Vietnam acknowledges the important role of Open Learning and Distance Education as a motive force for education and training in the whole country.

DIRECTIVES AND NATIONAL POLICY IN OL& DE DEVELOPMENT IN VIETNAM IN THE LAST FEW DECADES.

Just after the end of the 1st Indochinese war (1945 - 1954) in many colleges and universities were established units and departments in charge of in-service training and correspondence education.

A national project on OL and DE development in the period 1996 – 2000 was carried out since 1990 [2].

The four principal directives adopted in Vietnam in this period were as follow.

1. Radio-TV contributing to the development of DE.

Since 1985 first cooperation of the national radio and TV with higher education institutions in the area of distance education were shaping and developing.

Actually at the National Radio there are 2 channels which broadcast daily 4 hours time for DE high education degree programs and 4 hours time for non degree programs: *The production and broadcasting of these programs are totally financed by the national budget.*

Following a recent survey done at the department of Sciences and Education- VN national Radio, from 1996-2000 regular DE learners who attended these programmers were increasing from year to year and reached a total population of more than 200,000. At the end of 2000, more than 2000 DE learners have past final examinations and were graduated Bachelor degree, more than 100,000 have credited vocational and professional certificates and got jobs in many sectors of the national

economy. From 1996-2000 more than 20,000 teachers in remote regions of the country had their knowledge and skill updated and were upgraded and through DE learning programs.

At the National TV there are also a channel VTV2 which is assigned for education and training. In co-operation with Hanoi OU, Hanoi National Uni. HCM City Uni. Of Technology, Cantho Uni. daily 6-8 hours times of Sciences and training programs were broadcasting on VTV2 as well as in almost provincial TV.

2. Creating of institutions in charge of DE organization & management.

In 1990 two Open Learning Institutes were created: the OLI N^o1 in Hanoi and the OLI N^o2 in HoChiMinh City. From 1993 governmental decisions have established 2 Universities (based on the above mentioned 2 OLI) which are in charge of organization and management of Open Learning and Distance Education in the whole country: the Hanoi State Open University in the North and the Semi-public Opening University in the South.

Presently in the 2 Open Universities in Vietnam: The Hanoi State Open University and the Semi-public OU in HoChiMinh City the total student population is over 60,000. The HSOU has its tutorial center network spreading in 16 provinces from the North to the South and offers diplomas and/or bachelor degrees for distance learners in more than 20 areas of specialty. In a term of 5 years (1995-2000) more than 10,000 graduated from HSOU has become the main component of skilled workforce in mountainous and remote regions: Thainguyn, Nghean, Quangngai, Yenbai, and Central Highland...

In parallel with activities of the 2 OU, in each of the 64 provinces of the country there are a Local center for Continuing education which is assigned to coordinate OL & DE in the province in co-operation with Universities and other traditional education institutions in the region.

3. Developing international relation and co-operation.

To enhance the activities in our institutions, to learn and exchange experiences with other countries, especially with countries in the region, our government has adopted an open policy in Education.

The number of exchanges of professors, students, academic materials in DE and OL between Vietnam and other countries in the area and all around the world as well are increasing from year to year.

Vietnamese institutions participated to many international organizations: the CIEFFAD (Consortium of Distance Education institutions among French using countries) the Association of Open Learning in the Asia - Pacific region, the ACEID - UNESCO PROAP ... Bilateral academic relationship was established between Vietnamese institutions with universities and colleges experienced in activities for DE and OL in many countries: China, Thailand, Singapore, Hongkong, India, USA, Australia, Eastern and Western European countries.

Recently in November 1998 and March 2000 the 2 Open Universities were holding the important International Conferences: "*OL and DE for the coming century. Needs and perspectives*" with the participation of international educators, education policy makers, searchers and specialists from many countries.

4. Socialization of education and training.

Only the effort of the government cannot cope with such great increasing demand of DE development in our country in this coming decade. One of our national policies in this period is socialization of DE development i.e. motivation and co-operation of all efforts of every organizations and economical sectors of the whole country to help DE development.

The government in concert with many social organizations: the Federation of Youth, the VN Association of Women, the VN Association of Farmers, the Labor National Federation, VN General Associations of Applied sciences and techniques launched a great movement of "*socialization of education and training*".

Many public and non-governmental local centers for continuing formation were created and installed in provinces, even in some remote districts all around the country with a non profit co-operation with Universities, higher and vocational education institutions have provided opportunities of learning for millions of people especially in remote areas: *Learners have not to leave their home and their daily jobs but at the same time could benefit training program with minimum coast*: they have only to pay fees for some materials and for examinations, in averages about 1/3 or 1/4 in comparison with traditional learners who pay for each credit.

Besides, many organizations in the industry of both public and private sectors regularly helped and sponsored these continuing formation centers with different activities: providing facilities, donation of equipment's, scholarship for best learners, awarding prizes for best students after each examinations... providing jobs for graduated students...

DEVELOPING ICT AND ONLINE TEACHING LEARNING IN TVET.

In the last few decades (1980-2000) the above mentioned directives and measures have brought important results in the development of DE and OL in TVET in Vietnam.

However, in the point of view of the Theory of Information, Teaching –Learning is a process of transmitting, processing and storing of Information which is realized in the two ways relation between learner and teacher. A big disadvantage for self taught learner and/or isolated learner is the gap of direct communication with teacher and with their classmates.

In the period of correspondence education the communication between learner and teacher was realized only by mail (writing and printed material support).

Later with the development of new technology other media were coming in use in DE: telephone, Facsimile, audio-video tapes, radio and television. These new media have contribute effectively to enhance the relation between teacher with remote learner therefore they still cannot create a "*feed-back*" which will be able to diminuate the feeling of isolation of self taught learner and to motivate them in the learning process.

We are now at the beginning of the 21st Century - the age of Information Technology boom which involves drastic changes of the world - the thorough changes in conceptualization of mode, organization and performance in every socio-economic aspect and of course in education and training as well.

In the last decade, new achievements of ICT were coming in use more and more popular in many sectors of the national economy in Vietnam as well as in education and training.

The Vietnamese government pays great attention to the use of ICT in DE and OL .

Since the years 1990s many learning software packages came to be more and more public in Vietnam, Artificial Intelligence and Teaching Learning software were studying in some main institutions in Vietnam : the Hanoi University of Technology, National Uni in HCM City, Hanoi Open Uni, the National Center for IT at the Ministry of Education & Training and first programs were put in use in many local tutorials centers of OL & DE in provinces. Recently Vietnam participates to a

regional pilote program of online teaching for tourism guide in common with other countries in the Great Sub region of Mekong : Thailand, Laos. Mianmar, Cambodia and Yunnan (China).

However at the present time IT and Internet cannot be used widely for DE and OL in Vietnam because of some difficulties which will not be overcome easily within 5-10 year to come.

First, Information technology equipment is still rare; the number of students of the Faculty of Information Technology - Hanoi State Open University who have their own computers does not come up to 20%.

Up to this day, the number of people who use Internet all over the country has not yet come up to 150,000 among the population of 78 millions and most use public-owned computers in trading services.

Secondly, the cost for Internet and telephone services is still high in comparison with the income of average people. On average if student uses the computer one hour per day, he will have to pay 4 or 5 times as much as the tuition fee for on-campus learner.

Thirdly, language barriers hamper the use of Internet: In order to log in Web Site, to participate in chat rooms and forums, to benefit the giant information resource in the Internet the student has to acquire a certain level of the English language which is not easy even for language students.

Because of those reasons above mentioned, in order to apply the achievement of Information communication technology and Internet in distance education within 10-15 years to come , Vietnam should work out appropriate plans for their application.

Presently we still focus on designing academic teaching-learning software based on recent achievements of the theory of Artificial Intelligence [8], [10], obtaining appropriate software from Internet and then reproducing them into Vietnamese versions; those software (VCD and DVD) will be sent for use on LAN of local centers or PC for owners.(Computer base learning)

Step by step the Center of Faculties and Universities should set up units which supervise distance education programs on internet and create Web Sites and/or homepages (for instance the <http://www.dhm-hnou.edu.vn> of Hanoi OU) to communicate regularly with distance learners and to manage the organization of the training process in regional centers in all around the country as well as to make contact with international distance education centers of high reputation (online learning).

Almost of teaching learning software will be reproduced and put on these websites under the form of separated training units.

It depends on geographic conditions to promote and facilitate the development of local intranets and on each of which there may be a gate linked to internet: the communication there only operates through the central server, free of charge for internet access, which is acceptable for the learners. (Intranet base learning).

*

* *

The above mentioned directives and activities show that the Vietnamese people acknowledge very clearly the pressing requirement of the development of the use of ICT for TVET in the whole country.

In the next future we believe that with the step by step development in accordance with the national socio-economic condition, with the closer and closer international co-operation, TVET in Vietnam will be capable of benefiting from latest achievements of ICT in the world community to apply in Vietnam and will efficiently contribute as a powerful tool for the noble cause of eradication of poverty and social development in the country.

REFERENCES

- [1] **Jacques Delors: *Learning - The treasure within*** - The Australian National Commission for UNESCO - 1998.
 - [2] **Vietnam national project for the development of Distance Education in the period 1996 - 2000.**
 - [3] **Gestion des moyens multimedia en FAD - *Rapport pe'dagogique*** - ACCT Mauritius 1993.
 - [4] **Conception et re'alisation d'actions e'ducatives en FAD - *Rapport ge'ne'ral*** - ACCT - Bordeaux - France 1994.
 - [5] **THAI THANH SON: *Quelques traits sur les premie`res re'alisations de project national de FAD dans les anne'es 1995 - 1996*** - Rapport annuel au Bureau re'gional Asie - Pacifique de l'ACCT - Hanoi 1996.
 - [6] **THAI THANH SON: *Open Learning and Distance Education in Vietnam for the coming century: Needs and perspectives*** - The 5th UNESCO - ACEID international conference - Bangkok - Thailand 1999.
 - [7] **THAI THANH SON: *Education in Vietnam in the period 1996 - 2010: A tool for poverty eradication and social development*** - The 3rd UNESCO - ACEID International Conference - Bangkok - Thailand 1997.
 - [8] **THAI THANH SON: *The role of IT in the future development of OL and DE in Vietnam...*** National Conference on Distance Education - Hanoi 2000.
 - [9] **NGUYEN THE NGHIA and collaborators: *Fundamental Survey and forecasting about manpower resource in the Center Vietnam*** - Danang University 1996.
 - [10] **NGUYEN THANH THUY: *Artificial intelligence*** Nha xuất bản giáo dục - Hanoi 1997.
-