

Information Technology's position, role and function in teaching and study in the period of science and technology's integration and development

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Abstract: Information technology (IT) has become increasingly important and has a strong effect to all of the social life's faces, becoming one of the effective tools to promote the economic and social development, which content education, training. In the period of integration and development of science and technology, to strongly renovate the method of education and training, overcome the one-way transmission and train the creativity of the learners, step by step applying advanced method and modern facilities into the teaching process, ensuring self-study and self study time for students, especially students at colleges and university, is very necessary and urgent. The news showed author's opinions about position, role and function of applying information technology in teaching, studying and educational management in the modern era of information and intellectual economy.

Keywords -Teaching method, IT, teach, study, educational management.

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I. INTRODUCTION

Nowaday, the achievements of Science and Technology (S&T) are moving the world from industrial era to informative and knowledge economic era. It effects all the fields and quickly, deeply changes society material and spiritual life. Mankind's treasure of knowledge is getting diversified and abundant. In that condition, globalization and economic integration are indispensable objective trends in the developing countries. The media, telecommunication network, internet create a positive condition for cultural exchange and integration, and facilitates the innovation and development of education. The school came from closed activities to open the door widely, communicate with the society, link tightly with researching and applying S&T. The Lecturers instead of just imparting the knowledge, they move to provide self-collective information method to the students with analysis and synthesis of IT.

In that international context, to response to the national development needs, Vietnam's education need to perform a deeply, and totally innovation about both content and teaching method according to the spirit of the Resolution TW2, class VIII of the communist party of Vietnam, especially direction 58-CT/UW of Political Department on October 7th, 2001 about pushing the IT application in serving the industrial and modernization enterprise pointed out the center of education is training the human source for the IT and pushing the IT application in education and training. Therefore, the application of IT in education and training will be one of the necessary and important solution for enhancing the training quality to respond to the social needs in the universities, colleges in general and in the College of Foreign Economic Relation in particular.

II. Research Data

2.1. Reality about teaching and study methods used in universities and colleges nowadays

In Vietnam, the common teaching method in universities, colleges are: announcement - repeat, modeling - replication. Although, there are new teaching methods such as: explanation - partial searching, raising problem- research, etc., have gotten more attention, most of the schools are still use the old method, the one-way communication, "teacher read-student copy", which haven't promoted the student's positive, independent and haven't fostered their self-taught, self-search ability. The presentation method, lecture are still the major teaching methods. The teaching process is still very heavily theoretical, the traditional teaching way is using speech, the student uses the method of listening and remembering passively. The guidance event about self-taught, reading, discussion ... for student haven't been focused properly. The practice time is few, and we haven't put a high expectation for students in study or scientific researching. Most of the student only know how to study right just before their graduation day, so their learning efficiency is not high, the self-taught, self-development abilities are low, familiar with listening and recording, unfamiliar with self-reading and self-

summary. The common result is that students only study according to the teachers' lectures without referring the document, or studying with a critical, creative thinking to lead to problem-solve ability.



Figure 1. Teaching method “teacher read - student copy”

With the teaching methods as above, it will totally leads to a passive studying way of the students. According to the researched data of the educational researchers, there are more than 70% of the students only study in their notebook. The rest of them refer to other documents, do realistic relation or practice their knowledge into reality. Only 7.6% of the students are able to raise and solve problems. With such result, the curent teaching methods in the university, college level, are not able to respond to the training requirement of the society.

From the international context and domestic context has led to innovation teaching method is an current urgent issue of the education sector in our country. In the other hand, the strong development of S&T, especially IT - with lots of positive roles in teaching process – has shown that the putting IT into teaching in all levels, especially at university and college level is a requirement, an indispensable trend to develop education and achieve the purpose of activating study activities of students, improving efficiency and quality of training.

Applying IT into teaching to help both teachers and students to use technology effectively; the students' learning become creative and independent; develop a more efficient learning environment, and thereby helping learners become more active, more capable of thinking, and creating opportunities for student to access the knowledge in different methods (such as referring the hard-copied document, internet, etc) with different targets (the students inside and outside the classroom, other teacher, etc.)

2.2. IT concept

IT: is a term to describe the science and technology relating to information and information processing. Therefore, “IT is a system of scientific methods, technology, facility, tools include mostly all of the computers, communication network and data storage system to organize, store, transmission and effectively exploit, use the information in all gandas of economical activities, social, cultural,...of human”.

In Vietnam, IT method is understood and defined in the Resolution number 49/CP of the Government signed on August 4th, 1993 about “Developing IT in our country in the 90’s”: IT is a group of scientific methods, facilities and modern technical tools- mostly are computer and telecommunication technique to organize, exploit and use it effectively all of the productive and potential information resources in all the field of human and society activities.

2.3. Benefits of applying IT into teaching

2.3.1. For the teachers

Firstly, the application of IT in teaching helps the teacher to enhance their creative and become more flexible in their teaching progress. For example, the teachers, instead of binding themselves in the available amount of knowledge, they can study more about other subjects such as informatics and image, sound usage abilities in lecture design. Besides, applying IT in teaching helps teachers to share their lecture with their colleagues to discuss and enhance the teaching plan's quality. And most especially, applying IT in digital lecture helps the teaching methods more effective, save more time and in exchange, the teachers can create more engagement activities between teach-student or between students themselves. Simultaneously, it can diversify the learning model for the students.

As a teacher of Business English, I would like to thank IT, the multimedia environment and the digital lecture that brought such exciting, and clear Foreign Language lessons, accurate, and effective when we can apply all of them to our lectures to create an attractive communicate and study environment with sound, images, animation and other suitable effects, etc. to lead the students into our lesson in a logical, natural, exciting way but also focused by it's attraction.

2.3.2. For the students

Students are the second target who receive direct benefits from applying IT into teaching. They can reach to the newer, more attractive way of teaching than the traditional read-copy way. Besides, the engagement between teachers and students have improved quite a lot, students have more chance to express their point of view. This not only helps them gain confident, but also helps the teachers to understand more about their abilities, characteristic and their level of knowledge acquisition to come up with a more suitable and scientific adjustments.

Moreover, the more contact with IT in the class, brings more necessary informatics abilities to the students since they were sitting in school. This will be a great foundation and help students to be flexible in diversifying their learning-practicing activities, creativity, logical thinking inside the presentation in front of the class which are designed by full of colorful images and sound with all of the images, sounds and colorful animations, It also enhances the ability to find information for their lessons.

2.3.3. For the society

For a long time, the application of IT in teaching has been performed in a lot of other developed countries in the world. Now, in Vietnam, even though the duration of technology application in teaching at schools is rather short, the benefits of them have been showed clearly. The teaching quality has been enhanced, the teaching methods have been changed in a positive way. We can hope that in the near future, Vietnamese education will catch up with the development of the world's leading educational countries.

Clearly, those improvements as above are not only bring the benefits to the students and the teachers, but also has an important meaning to the development of both society and the country.

2.4. Advantages and challenges when applying IT in the teaching and and studying process

The first benefit of teaching method by IT that effective and applied widely these days is digital lesson plan.

According to Wikipedia "Digital lesson plan is a form of organizing the lessons to perform digital lesson plan. All of the lesson plan will be programmed and will be controlled by the teachers in the multimedia environment with the support of IT. Different with the traditional lesson plan, digital lesson plan is an engagement between teachers and students, thanks to the teaching vehicles with the support of IT." (https://vi.wikipedia.org/wiki/Bài_giảng_điện_tử)

Multimedia environment connects images, videos, camera, etc. with sound, document, chart, graphics, animations, etc. presented by computer according to the prepared script to achieve the most effectiveness of a multi-sensory learning process.

The advanced of graphic technology can be modified by several processes, natural, socialize phenomena in human without or should not occur in a school condition;



Figure 2. IT brings gigantic data banks

Knowledge technology connects human intelligence to perform the high-intelligent jobs of the experts in different field;

The gigantic and vary data banks are connected together and to users through computer cable or Internet, etc. can be exploited to create some extreme positive conditions and indispensable for students to study on activities and self-awareness, positive and creative, and can be performed independently or exchanged.

Therefore, with applying digital lesson plan in teaching, the teachers save more time than presented on the board, low down the theory load with prompt designed slides, increase the communication among students and the teachers can observe and judge the students.

Beside the thesis aboved, the students can be attracted by the design of the lesson plan. It can stimulate the passion for exploring knowledge of mankind, from there, the students will ask the questions actively and solve the problems freely and full of thoughts. Then, the teaching and studying process will become more enthusiastic and help students to remember longer.

Besides, the experiments, documents provided by several channels: image, word, lifeful sounds will help students to see, receive easier and think more reasonable. From there, they can have their expectation about the new nature and rules. This is a big benefit of IT and marketing in renew the teaching method process. We can ensure that, IT environment and marketing, totally will have positive effect into students' mental development and this can born the new learning methods.

III. Position, Roles And Function Of Applying It In Teaching, Studying And Managing Education

3.1. Position

IT is applying widely and effectively in human activities nowadays. It creates big changes inside the society, including the training process in universities and colleges.

Technology is understood generally as an application of science in human realistic activities inside the society.

The trend of globalization and creation of a "digital" economy lead to a close relation between computer with media and create a new definition of IT and communication (understood as Information and Communication Technology - ICT). This is a new high-speed developing industry. This is the overall means of data processing, retention, transmission and reflection of information products, structured into three parts:

Communication industry division: Phone cable, cable, satellite, mobile network, broadcasting network, etc.

Computer industry division: computers, electronic devices, industrial hardware (mainly to create facilities, tools to directly serve the community industry), industrial software (to enhance, develop the affection of the industrial hardware, computers, etc.) and other services (ecommerce, email, etc.)

Information detail Industry: include data, images, activities of the society in all gandrass: culture, sport, art, S&T, training education, entertainment.... In the past, present and the future. In general, this is human huge collection of materials.

All 3 of the divisions connect together to create a big potential. This is a network of technical equipment versatile, create a backbone for both the national and global information infrastructure.



Figure 3. IT is applying everywhere, everytime

The truth about the process of applying IT in teaching is using facilities to expend, open up the abilities of listening and watching and giving the machines manipulation and information process. Those facilities are using as if new intellectual work tools including: MVT, video, over-head projector, LCD-projector, digital camera, basic softwares: building virtual experiment, simulation experiment, CD-ROM, etc. especially Internet. MVT plays a center role in co-operating, processing all of the expressive forms and communication. MVT connects with some softwares to create a support tool that has huge functions, such as: can create, store, arrange,

edit, reappear, etc. a huge amount of data quickly, easily. Therefore, MVT is treated as if the most important teaching tool in the modern society.

3.2. Roles

Nowadays, the renovation of teaching method inside universities, colleges are cared a lot by the government and the society. The renovation of teaching and learning method orientation has been determined in the 4th Center Resolution, No VII (1.1993), the 2nd Center Resolution No.VIII (12,1996), has institutionalized in the Education Law (2005). Especially, according to the Education Law, Point 82.2 stated: "The education method has to promote students' positive, self-disciplined, active, creative: suit with individual class's characteristic, subjects; nurture the self-taught method, practice the knowledge usage in reality, emotional touched, bring joys, learning interes to the students".

As a result, according to the Education Law, the teachers have to slowly move from traditional teaching method (the teachers play a center role) to active teaching method - students are the center of the activities to promoted students' positive, active, creative, and create an excitement in learning for them. Besides, teachers have to nurture the problem nature awareness ability, independent thinking and creatively apply the knowledge into reality for the students. To achieve those targets, teachers have to increase the IT application into teaching because of reasons below:

First, it suit with the era's requirement. In the Western education system, IT has officially brought into the undergraduate program. They quickly realize that the IT details bring benefits to all other different subjects. Therefore, the applying it into teaching in the undergraduate program in Vietnam is suite with the development rules of the era.



Figure 4. Apply IT into teaching

Second, applying IT in teaching is suite with the policy of the Party and the Government. The education and training development strategy of the Ministry of Education and Training clearly states: "Step by step enhance the education based on IT...IT and media will create a big innovation in the education management system, in transmittion the program's details to the students, push a revolution about teaching and learning methods. So, the Ministry of Education and Training determined the path for developing Vietnam education is "based on IT" and it is a facility to push the "revolution about teaching and learning methods" - means that, changing teaching methods inside the universities and colleges.

Recently, the Ministry of Education and Training promulgated a decision to "prohibit the read-copy teaching method" made applying IT in teaching pushed harder. However, teachers should not indulge the projector in the exchange of the black board, should not transform read-copy to "show-copy". In the last few years, some teachers are still holding the same definition between "applying IT in teaching" with digital lesson plan. Therefore, when they plan their lesson by Powerpoint, they give all of their works (stabilize the class, check the previous section, advice, etc.) and all of the lesson details into slides to "show to the students". According to us, this is a not entirely correct definition because IT is not a lesson plan. It only plays a support role for the teaching process and helps the teachers to provide variety of different sources about an object such as: word channel, image channel, document film, etc. so the students can figure out their own knowledge and promote their positive, self-discipline, creative in learning.

Third, IT contributes to the modernization of teaching means, teaching software such as Activestudio, Powerpoint ... will help lecturers create lectures suitable to the needs of students, helping them have many methods of learning. In particular, it will help faculty create a two-way interactive classroom: teachers - students and vice versa. This is in line with the Ministry of Education and Training's view that "learning is a process of acquiring information that is oriented, replicated and developed; It is the process of distributing information and helping learners to carry out the above process effectively". Therefore, IT applications will help students to

receive information more effectively and will turn that information into their knowledge. At the same time, it also promotes the activeness, initiative, creativity of students, exploits many senses of learners to acquire knowledge.

Fourth, the application of ICT in teaching also helps teachers shorten the teaching time, have time to invest in the process leading, create problematic situations to stimulate creative thinking of students. Students can easily visualize and have accurate concepts about images, objects, and phenomena when interacting with visual image (material images, maps, documentaries, etc.).

As such, the use of ICT in teaching today is an urgent need for the Vietnamese education system as it gives lecturers more time to lead students to grasp the problem, the problem to stimulate the creative thinking of students. On the other hand, it will also help students be more active in the process of acquiring knowledge when exposed to a variety of sources. From there, the learners acquire self-absorption skills, independence in thinking and excitement, enthusiasm in learning. IT has become increasingly important in teaching, and it has played an increasingly important role in teaching and learning at universities and colleges in general and the College of Foreign Economic Relation in particular.

3.3. Function

Applying IT in teaching and management at universities and colleges in Vietnam has some functions as below.

3.3.1. Education model changes

According to the information approach, at the Paris Conference on Higher Education in the 21st Century organized by UNESCO in 10/1998, three models of education were summarized:

Table 1. Teaching methods in universities

Model	Center	Student's role	Basic technology
Traditional	Teacher	Passively	Board/TV/radio
Informativ e	Student	Actively	PC
Knowledg e	Group	Adaption	PC + cable



Figure 5. Education model "knowledge"

In the models mentioned, the "knowledge" model is the most modern educational model, formed when the most important achievements of IT and communication are the Internet. This new model has created many changes in education.

3.3.2. Changing the quality of education

Applying IT in education has made considerable changes due to following reasons:

For management, IT helps managers not only seize the state of system quickly, accurately and reliably but make right decisions as well.

For teaching, IT helps teachers improve teaching quality, learners are better at grasping. Besides, the Internet allows learners to search information, update knowledge and examine themselves.

For quality assurance, thanks to IT, quality inspection has been carried out objectively, which motivates schools and organisations to make improvement plans, aiming at reaching output standards.

Due to the importance of IT in improving the quality of education, the Government and Ministry of Education and Training has paid attention to apply IT in teaching. Over the past years, Departments of

Education and Training under Ministry of Education and Training have directed school to apply IT in teaching in order to contribute to the quality of education.

3.3.3. Changing the form of training.

IT and communications have made major changes in education and training. New forms of training have appeared including:

- Distance learning: At present, there are many terms to describe distance learning such as open education, distance education, distance teaching, distance learning or distance training, etc. According to scholars around the world, "Distance learning is a form of education in which there is physical or (and) time separation between teachers and students during the majority or the part of learning.

There is still not a specific definition of distance education. However, in general, distance learning is a teaching activity that takes place indirectly through distance learning and teaching methods. It is understood that distance learning consists of the following elements:

+ There is space separation between teachers and learners. This distance may be at the same school but different classrooms or even different geography from several kilometers to thousands of kilometers.

+ Teaching content is delivered to learners mainly by indirect forms such as printed text, sound, images or computer.

+ The interaction between teachers and learners (if any) can be processed immediately or be delayed after a period of time (time separation).

Depending on the distribution of the teaching content and the relationship, the interaction between the teacher and the learner has different kind of organization and implementation of distance learning. Basically, distance learning is categorized based on the relationship between teacher and learner in the teaching process, that is the interactive distance education and non-interactive distance education.

Interactive distance education is the interaction between teachers and learners, exchange and check information through the communication media.

Non-interactive distance education means that the teachers and learners do not interact with each others. The information (knowledge) is placed in the information resources, the learner actively study and research.

The technology used for distance education is very varied. On the basis of distance education, it is possible to understand in a general as the following: "It is a form of education and training based on the audio-visual technology, Information Technology. Distance education is mainly self-study, with the active support of documents, Information Technology and telecommunication; It is also possible to have the guidance and support of the lecturers from the training institution. "

Online training: online learning is a kind of learning using the computer network and internet.

In the traditional studying (also known as face to face studying), students receive the information directly from lecturers. One important thing of the teaching - study process is the two-way communication between lecturers and students, students and students with self - study mode by books, audio, video and television ... and students has the lack of this two-way communication element.

Online learning is designed to create the two-way communication between students and virtual lecturers and exchange information with other virtual learners through computer network or internet. Online learning also stimulates the self-studying of students, and students can easily access to the diversity of information source than lecturers.

It has been around for a decade, until now, Online learning has been a very popular kind of learning in the world, not only supporting self - studying students, it is also useful for students studying in the classroom by the traditional training.

Online training (also known as e-learning) is a virtual learning method through a networked computer that a main server might be in anywhere where pre-loaded documents and software are needed to ask/ requirements for online students. Or, the trainers can upload images and sound through fiber cable, broadband (ADSL) or wireless (WiFi, WiMAX), local area network (LAN) etc. The advantages of online training are to minimize travel costs, save time, space. Building the network infrastructure is inexpensive compared to the building a real school due to no requirement the complex licenses. The disadvantage of online training that client has a slow connection or the large packet, the data will be lost or malfunction. That is inevitable.

Nowaday, there are many definitions of E-learning, the simple way to understand: " E-learning is a term used to describe the learning and teaching based on the information technology and media (Compare Infobase Inc).



Figure 6. Online training

There are many different ways to understand the e-learning, but in general there are some points:

+ Based on the information technology and media. More specifically, network technology, graphics techniques, simulation techniques, computing technology ...

+ E-learning is a good way for supporting the traditional learning methods because e-learning has a high interaction based on multimedia technology, facilitating for learners to exchange information more easily, as well as providing the studying content, fitting in the ability and preferences of each person.

E-learning will become an indispensable trend in the knowledge economy. Nowadays, e-learning is attracting the special attention of countries around the world that many organizations and companies business in the area of e-learning were founded.

Currently, besides the e-learning, other kinds of online training such as: m-learning (mobile learning), u-learning (ubiquitous learning) have been studied.

3.3.4. Changing the management method

When computers hadn't been born yet, IT had not developed yet, management & administration work had still be done by hand in agencies, enterprises and schools. Since computers appeared, Information technology has developed, management works has changed, from manual management to computer management and technology. This change has brought great effect to businesses in general and schools in particular.

IT supports the management and administration of schools in all areas: finance, specialization, human resources, students, planning, reporting statistics, property, equipment, teaching aids ... and make decisions.

To improve the efficiency of IT application in management, the Ministry of Education and Training has instructed the implementation of ICT for departments in each school year, focusing on applying IT to change the management work.

Over past years, with many different resources, the IT infrastructure of the education and training sector has grown considerably. Most schools have internet connections; Many schools have informatics rooms, electronic libraries, the ratio of lecturers buying computers and connect to the Internet has also increased significantly. The successful education network brings new opportunities for education.

However, due to financial and human conditions, the application of IT in management in schools is still fragmented, not overall and synchronous so the efficiency is not high. In order to improve management effectiveness, it is necessary to change the way of management of the school, management of management education system via the internet.

Online management will bring high efficiency in the management and operation of the school thanks to the following advantages:

- Allows lecturers, students, administrators to work anywhere, anytime an Internet-connected computer.
- Parents can get information about their school and their children's study results anytime, anywhere via the Internet or via cell phone texts.
- The educational management level can get the situation and statistics of the school quickly and promptly.
- Database is unified, synchronous, easy to secure.
- When deploying the management system over the network, schools save money in the installation of servers, network equipment, network management personnel, software copyright.
- Save on building, repairing, upgrading software.

However, the implementation of management over the Internet also raised some problems:

- Requires strong IT infrastructure.

- Requires synchronous implementation at all levels.
- There must be unified direction from the top to down.
- Managers, lecturers and staffs must have certain computer skills.

IV. Conclusion

The explosion of IT in particular and Science - Technology in general are strongly influencing the development of all sectors in social life. In that context, in order for universities and colleges to meet the urgent requirements of the industrialization and modernization of the country, in terms of human resources in general and the ability of students to graduate in particular, one of the important measures is that we need to reform teaching methods in the direction of using IT and modern teaching equipment to promote creative thinking and practical skills to improve the quality, following the teaching trend which creates the spirit of active learning and knowledge acquisition for students, taking the motto self-study as a goal in the study.

Although technical means are only a tool to support teaching and learning, it is impossible to replace the leading role of teachers and the efforts and creativity of students. Still in the current period, we can not deny the role and importance of using IT in education and training, and it can be argued that IT is the foundation of a new development method, so that current and future development of the education system must be based on IT and is seen as a solid foundation.

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