



Innovating Our Higher Education Models Based on Experience in UK and USA

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Abstract

Our higher education need to innovate education models and actively connect every member in big social system, for example, enterprises, society and environment. This paper shows some new ideas on innovating educational development based on author's studying experience in UK and in USA.

Keywords: Industry university, Contract education, Higher education, Social system, Operation

UK and American are not only big but also strong countries in education. The top ten universities in the world are all in these two countries. Fortunately, as an academic visitor, I studied in both USA from March 2007 to March 2008 and UK from April 2001 to August 2002. During the period in both countries, I visited many top universities, such as Harvard University, MIT, Princeton University and Cambridge University, Oxford University, Birmingham University and experienced studying process and educational model in person. Based on the studying experience, this paper introduced educational models happening to universities in both countries, and then analyzed their educational features with system theory. Finally, this paper gave some new ideas on innovating our higher education models.

1. Industry University in UK

The British thinks that popular innovation and creation in the general public is more important than advanced invention in limited geniuses for making its country strong and rich. So, UK government provides its citizen with well educational equipment and environment and creates many valid study models to support its citizen for life study. And Industry University is one of many study models.

Industry Universities are organizations which offer wide range of services for learners and learning providers. Students in these universities are mainly adults who want or need to get continual further education, such as employees, managers, and all kinds of social labors. With modern internet and IT technology, Industry Universities can evolve open, long-distance or internet study service. The universities orientate to public education not gifted education, offer for life education not for graduate education, train skills or update knowledge of labors not theoretical research. It is mainly responsible for encouraging the public for life study with varied education models and flexible education time.

Industry Universities provide all levels education, from necessary skills of basic reading, writing and calculating to professional skills and business management knowledge as well. According to program of industrial development in UK, the universities firstly offer training in industries which urgently need to renew labors' skills or knowledge, for instance, industries in IT, auto parts industry and service industry for new technology and then expand their training to all other industries while needed.

With modern communication technology, industry universities can provide various study service or program by telephone, television, CD-ROM and internet for learners of all levels. By internet technology, learning users can easily and conveniently study any module at any time and at any place. Every module or course is split up into many small projects which answer unique question so that learners can easily study these courses for their selves. Hence, personalized study website can be created in order to give learners assistance, for instance, websites for studying basic skills, for getting professional skills, for improving skills or for learning new knowledge if needed. Learners can gain personalized study service while industry universities extend their courses information from campus to whole society. These convenient studying services make learners easily get courses knowledge which gave only on campus and also greatly increate study requirement from society and individuals for life. What's more, these services validly improve competitive ability of small-medium sized enterprises due to their employees' continuously studying new knowledge

and professional skills. Just like Mr. Gordon Brown (former financial minister in UK) said: industry universities are of the same function now which brings every enterprise and every individual opportunity for easily studying for life by modern communication technology as open universities provided the young in 1960' with getting higher education opportunity by TV set in family.

2. Contract Education in USA

Contract education originated in southern states in USA in 1960' is one kind of prevalent training model of vocational education. Through development of many years, contract education has been one of important education models and also trained many good skill labors for American economic growth.

According to the requirement of enterprises, contract education provides training program mainly in two kinds of models. One is for adults of looking for jobs called training-for-job and the other one is for employees of improving skills called training-for-promotion. The former tries to make adults of having no work experiences or of wanting a new job gain skills needed for new job, for instance, skills of operating computer, maintaining machines or equipment, repairing buildings or servicing advice. And the later is mainly for employees' getting new knowledge, operating new equipment, learning new technology process and so on. So enterprises get stronger competence to challenge increasing competition and employees get better ability to meet requirement of new positions or higher managerial positions by training-for-improvement.

Teaching in contract education is flexible for meeting different learners or enterprises. Colleges often innovate existed teaching models with modern IT and internet technology and create some personalized teaching, such as discussing in small group, talking face to face, giving courses in class, opening forums, studying in practice and so on while needed. So, many enterprises or companies in USA connect colleges like these to train their employees or managers not rely on their selves.

Programs in contract education are also flexible and adjustable according to local industrial structure and economical development. Colleges provide different learners with various "program package" for their personalized study. For example, knowledge of computer and mechanics-electronics integrated technology were offered for American IT industries development in 1960', and knowledge of business management, marketing, software design and accounting were given for pulling service industries in 1980', and then knowledge closed relationship to local main industries were provided since 1990'.

Thinking features of skill training, many part time instructors or professors in contract education are technicians, engineers, business managers directly from companies, enterprises and advice organizations. And they not only give some courses in campus but also make training programs to meet wide range of increasing economic development and changing technology progress.

3. Thinking in System Theory

Thinking of teaching views existed between industry universities in UK and contract education in USA, we are easy to find there are two things in common. One is that colleges or universities think them selves as a member of big society system and build very close relationship and various operation with other members of big society system, for example, local government, enterprises, companies and service organizations. And the other one is that study on campus is only a very small part, not all, for life study because they think that high quality of general public is more important for making their countries strong and rich.

The system theory suggests that system can emerge many special characteristics such as wholeness and openness when members in system have continually dynamic interaction or they disappear at once. These characteristics, called as "new" or "emergent", mean that "the whole is more than the sum of parts". In other words, these characteristics may not be simply derived from the characteristics of isolated actor. For example, the non-inflammation of H₂O molecule is a new characteristic emerged from the interaction between an atom of hydrogen (inflammation) and an atom of oxygen (combustibility) and is not available for isolated hydrogen or oxygen element. By understanding the inherent nature of system, we can suggest that connect among colleges with other members of big social system enable education to gain a greater number of external recourses needed in development. These recourses emerge potential for innovation when they are exchanged, perfected, congregated among system members so education can greatly improve its capacity to innovate in specific ways.

4. Implications to Innovate Our Education Model

With IT and internet technology used in education industry, present teaching views and models has been greatly challenged. Universities not only give learners knowledge but also, what's more, develop learners' imagination and creativity because knowledge is limited but creativity is unlimited. So in internet society, colleges and universities should innovate teaching views to face increasing challenge.

4.1 Being a member of big social system

Colleges and universities should think their selves as a member of big social system and actively develop deep operation with companies, government, and service organizations with wide range of scope. Guide of governmental policies, need of enterprise and assistance from society can make education be full of activity. Society has made direct and big contribution to provide and accept students from universities and universities should try their best to build sustainable education system for the public for life study.

4.2 Building platform of information exchange between universities and enterprises

In traditional education view, campus is unique place of innovating, creating and diffusing information, knowledge and technology. In traditional operation with enterprises, colleges and universities cultivate students with academic degree, train employees and provide research achievement for enterprises, whereas enterprises choose to accept “products” from universities. In fact, these views and operation implicate a deep meaning which only campus can create and develop knowledge, whereas enterprises are only accept and digest knowledge. To a great extent, they limit or close access for colleges and universities to get external resources and knowledge needed in higher education development.

Colleges and universities should actively extend operation with enterprises in many ways. A kind of platform should be built for staff in universities and employees in enterprises to keep no-distance touch so that staff conveniently explores implicit knowledge in practice and also put their research achievement into production. Staff’s research or professional knowledge are trained or updated not only on campus but also in enterprises, for example post-doctor research station, teaching research station built on the first production line in enterprises. By doing so, it is more effectively for staff to transfer their research into money and for enterprises to generate innovation thought. On the other hand, successful business managers or engineers with rich experience should get into campus as part time instructors and give students knowledge from their practice and work. The platform builds a bridge for exchange of knowledge and information between campus and enterprises to create new knowledge.

4.3 Developing close relationship between universities and government

In present models, governments at all levels guide and control development of universities by making relative policies and transferring financial money to them whereas universities do routine work and make program based on government benefit. This means that governments are recourses’ holders and distributors of policies, funding, information and labors whereas universities are only users and takers of various recourses. They limit or constrain universities innovational insight.

Universities should develop close relationship in many ways. For example, they should try to create more opportunities to take part in local decision on social development, economic growth, and technological improvement. Therefore they enable to train their students to meet social need. Whereas government turn to paying more attention on how to create good environment for university development just as Xu Guanhua, former minister of Ministry of Science and Technology, said: Government function is to build good environment, to perfect service and to create helpful culture for social innovation development. Just like mushrooms, they can naturally grow when temperature and moisture are appropriate.

5. Conclusion

Higher education is a kind of social behavior and need to interact with other actors in all social fields. So colleges and universities should put their selves into big social system and develop more operation with enterprises, government and service organizations with wider range to transfer external resources into internal development opportunity more effectively.

References

- Dick Evans & David Smith. (1999). The University for Industry in British. [on line] Available: <http://www.tmag.co.uk/articles/dec-981.html>.
- Hong, Jun (2004). Study on Higher Education Development Based on Innovation Networks. *Science of Science and Management of S.&T.* 25,121-123.
- Lori L. Sundberg (2002). *Building Partnerships with Business: That Makes a Difference New Directions for Community Colleges*. New York: E-Publishing Inc.
- Ludwig von Bertalanffy (1969). *General System theory*. George Braziller Inc., New York.