

Students Study Planning System Research Based on Model Leading

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School of Computer Science and Technology at HIT (Harbin Institute of Technology) was established in 1956, which was the earliest in China. Now it ranks fourth in China and top 100 according to ESI(Essential Science Indicators). Numerous famous specialists, scholars and talented students are gathered here, being the school idol admired and followed by youngsters. In recent years, our school has been studying and exploring actively on how to develop the leading roles played by professors, alumnus, seniors and peer students, and on how to guide the students with their academic planning. For the freshmen, we help them understand the definition of computer, how to learn computer science, and how to plan their college life. For the sophomores, we help them get to know what abilities are required by the society, how to handle the specialized knowledge, and how to improve the comprehensive quality. For the juniors, they need to be clear what they are going to do after graduation and how to make preparations for that. For the seniors, they should be able to make a better transformation from school to society, and be totally prepared for their future career. This way every student on different stages of college life will get timely instructions.

Research on the theory of Model Leading.

Scientific theories are necessary for successful practices. Only if we get the essential of Modeling Educating, will we be able to adjust our teaching methods according to specific person, specific time and specific situation. Though the theory of Modeling Educating has gone through many years, it remains unshakable and becomes even firmer. The basic reason is that Modeling Educating corresponds to the primary principles of society, pedagogy, and psychology.

a. Modeling Educating Under the vision of Psychology.

Grasping the psychological principles and characteristics correctly and precisely is the foundation and precondition of carrying out educational activities. As a significant part of education, Modeling Educating should follow the natural principles of psychology. Many philosophers and psychologists take imitation as the foundation of Modeling Educating. Aristotle, Darwin and Bandura all think that imitation is one of the natural instincts of humans. Language, behavior, habits, and quality can all be built by following and imitating models. Modeling Educating plays an irreplaceable

role in the socialization of humans. Tarde, a French psychologist, even proposed that all the behaviors of humans are the results of imitation. He argued that imitation is irresistible, just like noctambulism. Through picking and advertising excellent examples, demonstrating and inspiring the educational objects to actively imitate the models' specific behaviors and moral characters, so that they can absorb and internalize all the good qualities.

b. Modeling Educating Under the vision of Pedagogy.

Modeling Educating visualizes and embodies moral beliefs and code of conducts through the behaviors of models. This is a purposed educational activity widely existed in human society. As Xu Shen puts in *Word and Expression* in Han Dynasty, *Education is the youngsters imitating the old and raising a child to be a good man*. Ye Lan thinks we should combine raise and educate and understand them as the influence that grown-ups exert on children, to make the educated a good person by the means of imitation. Confucius, the greatest ideologist and educator in China, proposed that *Keep good men company. When we see men of worth, we should think of equaling them; when we see men of a contrary character, we should turn inwards and examine ourselves*. Roger Ascham proposed that *A model is better than 20 aphorisms in book*. Locke said that *Nothing can impress others so gently and deeply like models do*. Johann Amos Comenius was also a proponent for educating children through models. *Parents, baby-sitters, instructors, and peer students' leading roles in life should be close to children*. Such points of view about models all emphasize its importance to education.

c. Modeling Educating under the vision of sociology.

From the perspective of sociology, the formation of models is influenced by the surroundings, and the surroundings will also get improved by models. Many of the ideologists in ancient China care much about environment and making friends. Mencius's mother moved their home 3 times to find a better environment for him to live. Motse once said that *Silk's color can be changed by dyestuff, and so does a country, a person*. Xuncius proposed that *A gentleman must select carefully where to live, where to travel to avoid evil and stay on the right side*. Aiming at the formation mechanism of personal views, behaviors, and faiths, Hamman, American social psychologist, and Merton, American socialist proposed an important concept, *Reference Group*, in 1940s. They argued that the formation of a society perspective is a function of positive and negative attitude every person hold towards some certain groups. When the objectives, standards and criterions of a group becomes the action guide of a person, they will compare themselves with the groups' objectives, behavior standards, ethical ideas, value judgment and lifestyle, and adjust themselves.

Explore the history of Model Leading in China.

At all times and in all over the world, every nation has its own idiomatic heroes and models in its different period of history. Modeling Educating and human civilization reinforces each other and has permeated to every aspect of social and human activities. Lots of historical experiences have been accumulated and are very long lasting. The

5000 years of civilization of China is also a phylogeny led by heroes and models. From the myth that Pan Gu created the world, legendary emperors or sovereigns led their people creating a civilization, to wise emperors like the First Emperor of Qin, Emperor Wu, Emperor of Taizong, and famous ideologists like Confucius, Mencius, Chuang Tse, they are all heroes and models highly praised. Many people advocate their outstanding achievements through writing books, school teaching and religious activities, to push Chinese people forward to work hard and create civilization.

a. Setting good examples by writing books.

From the Western Zhou Dynasty in China, Chinese people already have the tradition of recording the daily lives and spirits of representative persons, to promote and inherit good examples, and to guide the ordinary public to follow the heroic deeds. In the earliest anthologies of verse in China, *The Book of Songs*, there are quite a few beautiful writings, like *Sheng Min*, *Gong Liu*, *Huang Yi* and *Da Ming*. They vividly recorded the birth, growing up, country establishment, and contribution to agriculture, extolled heroes and early emperors who founded the country of Zhou. This made *The book of Songs* one of the earliest books that advocated good models. Sima Qian was the first historical biography writer, and his *Shih Chi*, including biographic sketches of emperors, aristocratic family, collected biographies, was excellent biographical literature. Many biographies of historical figures were extremely artistically charming. Four major classical novels in China, *Romance of Three Kingdoms*, *Water Margin*, *Journey to the West*, *A dream in Red Mansions*, have influenced people's ideology and value orientation with their figures, plots, and scenes. Recently, many books like *Times of Deng Xiaoping*, *Suffering and Brilliance*, *Zeng Guofan*, *the Biography of Lin Huiyin*, *the Biography of Steve Jobs*, *the Biography of Li Kaifu*, *Liu Yiting- the Harvard Girl* have become bestsellers on the Internet, attracting many people to get to know and understand the stars, celebrities, historical figures that they love and admire, from which they can gain more practical experience and philosophy of life.

b. Models of propaganda of Religious Activity.

Religious activity has always been an important method in Chinese model education. What is a religion or “zong” “jiao”? In Mandarin, “zong” represents ancestors, examples, models, and “jiao” means education. Thus religion or “zong jiao” use god, immortal, Buddha, Taoism and sage as models, leading people consciously standardize their own behavior, purifying their own souls in order to make themselves get to the high level of their models, becoming moral people with consciousness. For example, China has traditions for public memorial ceremony to ancestors of Chinese such as Yan emperor, Yellow emperor and Shun emperor, which is used to cherish the memory of ancestors' creating ancient Chinese civilization, promoting Chinese rising up and developing. And such ceremony became emotional link between Chinese at home and abroad. Memorial ceremony of Confucius has lasted for over 2000 years, in memory of Chinese ancient famous ideologist and educator Confucius' running private school, inheriting ancient knowledge and creating Confucianism. In this kind of modeling demonstration, thoughts and ethics in Confucianism become the model ethics of the whole society. People believe in such sanctified model like Mazu, Guan Fei, Yue Fei, Bao Zheng, Hai Rui, Qu Yuan and so on. People admire their noble

sentiment of concerning the country and loving its people. And this kind of belief influenced local folk custom and style of study. These religious ceremonies and methods in advertising morality and personality of famous people in the history influenced people's beliefs strongly and effectively. It is through these vivid and specific figures that people start to know about and learn to accept social moral rules.

c. Models of propaganda of school teaching.

School teaching is an important place of advertising models and heroes and is also an important link with which many models and heroine figures can be passed through one generation to another. Zhu Xi quoted Yang Yi's words in his "Xiao Xue": "Study in early age should not be just read and remember. Everyday memorize stories but should not only today and yesterday. First must be obedient, loyalty, trust, polite, sense of honor and sense of shame. For example, Huang Xiang lie on fan, Lu Ji owe orange, Ao virtue, Zi Lu carries rice. Just as what people say, and know reasons, long time and will be mature and dharma becomes what it should be." From this sentence, we can say that traditional education emphasizes a lot on the usage of the achievement of historical people, and thus do the modeling education. Chinese famous educator Confucius has always been criticizing influential historical people to enhance students' moral knowledge, to lead his students to criticize on such person as Yao, Shun, Yu, Tang, Wen, Zhou Gong and so on. In this way, students could clarify their moral concepts and build their own correct moral concepts. In the ancient school, "The Thousand Character Classic" was taught and it included 62 stories. "The Three Character Primer" included more than 100 stories. Through repeatedly reading these vivid and moving historical person stories, students consciously act like ancient scholars' act and saying. In the new historical time, though educating methods have changed a lot, model educating is still crucial containment in middle school and primary school's text books. For example, in primary school text book, main characters in *SiMa Guang hit the tank*, *Cao Chong weighs the elephant*, *The bees lead the road*, *Princess Wencheng* are smart and acute. Leading character in *Confucius acknowledging teacher* is eager to study and modest. Main characters in *Studying for the Rising of China* and *dignity* are self-respect and self-improvement. Such stories present models for students to learn from.

Student study career plan system based on model leading.

Computer science department of HIT was created in last century in 50s. Here China's first structural simulating computer was created, China's first talking and chess playing digital computer was created. And the department came into top 100 in world's ESI rank. Here comes out Mr. Chen Guangxi who built the HIT computer department, China's famous computer expert and information area expert team leader of state's "863" plan Professor Li Zhongrong. Also we have Professor Hong Jiarong who fought with death to write world's famous machine learning work in his last 200 days of life. Here we have China's educating famous teacher and China's model

teacher Professor Tang Shuofei. Academician Wang Tianran, Academician Fang Binxing, Academician Huai Jingpeng, Academician Gao Wen represent a lot of extraordinary talented people. This kind of phenomenon was called “HIT phenomenon” in China’s computer industry and has accumulated abundant source material for starting modeling educating project.

The Computer department showed its professional traditional leading effect through several ways such as figure fixing, vivid explanation and continuing transmission. Building famous teacher in small class, academic master in planning studying and student academic club, famous teachers’ leading role is expressed clearly. Insisting audiences are the center, leveling start achievement sharing meeting, creating modeling advertising and such ways are used to elaborating neighboring people modeling effect, and thus let the modeling educating run through college students’ whole process of educating planning.

a. History typical leading, development direction establishing.

In Confucian classic “Da Xue”, it pointed out that “Higher education should be aimed at knowing what is right and what is wrong, should be good to people, should be the best and the kindest.” It means that college’s aim is to spread the aboveboard and straightforward morals, is to let people give up old things and chase for new things, is to let people come to the perfect state. For college to reach this requirement, only depending on courses are far from enough. College must let college students express their own feelings and thoughts. Just as what American Princeton’s former headmaster, famous educator Abram Fleiss Kerner said, “in guaranteeing college’s high standard, college spirit is more effective than any other facilities and organizations.” Because of this, HIT computer department established professional tradition in leading students’ study career planning and let students understand what kind of people to become in the three aspects as following:

First, the images can show the historical models vividly, so that it could specify and visualize the good traditions of the school and it could help the students understand the traditions better. Hence, our department stands a bronze statue of Mr. Chen Guangxi as a mark of respect. In addition, we wrote the history of professional development, "brilliant computer years", we wrote the roster of Ph.D, we wrote the theme-song "brilliant computer years", and we set up "Guang Xi fund" and "Guang Xi Forum" series platforms. Also, we carefully made "the gallery of famous alumni" and "the wall of professors and doctoral tutors " in the students` dormitory. All the things we did can solidify the advanced models in the history of HIT computer`s development as symbols, which can be touched and learned from by the students.

Second, we show the stories of the role models vividly, and we inherit the excellent traditions and publicize the advanced models in loved way. Our department has held the culture gala, named "Song of the computer science" for 7 consecutive years. Through classic teacher-student chorus “Song of HIT” and “Song of Computer Science”, the poetry recitation "Echoes monument ideal", which is performed by teachers and students together, and San Juban "everybody says our department is good", which is also performed by teachers and students together. In addition, the gala also includes show performances which could reflect the level of research subjects,

and poetry competitions which students and teachers could stand on the same stage to compete with each other, and some other colorful art forms. The gala shows that HIT computer science serves the major national needs, and it also shows our struggling process of chasing the international academic frontier. Hence, it becomes the cultural feast to the students.

Third, keep spreading model achievements, and silently inject good cultural genes into students. At the very beginning, the department specifically designed old alumnus, old teachers' traditional educational presentation. The department started computer tradition and Chen Guangxi's outstanding achievements report in party class and every year, launch "Qingming Festival in memory of Mr. Guangxi" activity. And in July 1st the party's established day, the "graduating commitment before Guangxi statue", have gradually started to become a kind of mind touching model influencing students through the whole college career in a rolling and continuing way.

b. Experts and famous teachers demonstrate their own experience, and then we can understand our growth path more clearly.

Famous teachers of a university are not only the creators of the university spirit, but also the practitioners and heirs of the civilization of the university. Oxford University has such a version that tutors puff smoke to the students until it lit the flame in the heart of the students. Mei Yiqi, a well-known educator in China, Tsinghua university President, also particularly emphasized the modeling role of the teachers, and he came up with a famous theory, "the theory of following swimming", which says that 'the school is just like water, the teachers and students are like the fishes, and their actions are just like swimming in the water. The big fishes are leading and the small fishes are behind them, so the small fishes are following the big ones. Since they have followed them for a long time, they will be unconscious influence from what they see and learn and they even don't have to work hard for that. As for the teacher-student relationship nowadays, it's like the relationship between actors and audience, and it's much deviated from what they should be. As a result, computer science and technology department of Harbin Institute of Technology plays a guiding role in the students' academic planning from the following three aspects, so that the students can understand how to achieve their goals in the university:

First, we invite the experts and famous teachers of the field to teach the students how to plan their courses effectively, and then the students could understand their life goals more clearly. Professor Li Sheng, chairman of the national Chinese information society, for four consecutive years, combined professional development history, and the story of Mr. Chen Guangxi exploring academic frontier, with his own experiences of how to become a well-known professor from a peasant child, to tell the students how to become an outstanding scholars in the field of computers.

Professor Li Jianzhong, "973" chief scientist, for 3 consecutive years, combined his own rough growth experience, and his learning in America, with his experiences of chasing academic frontier with pain, to guide the students to be Chinese of character with self-esteem, self-reliance. One of the century talents, Professor Liu Ting, for 5 consecutive years, learned from Jin Yong's novels, The Art of War, HIT motto, research experience, and etc. And he explores as university students in the new period,

how to embody the advanced nature in innovation.

Second, we adhere to carry out an event, named “famous teachers communicate with students’ after-class”, and the event could really help the students to find their own way. Since 2003, our department began to carry out the event of “secretary communicates with students’ after-class”, and then we expand it to “secretary and dean communicate with students’ after-class”. In addition, our department has already held this kind of events for 70 times since 2011. For the needs of the students of different grades and the different expertise of the teachers, we established the corresponding master library, and we set up a schedule by arranging the event for freshman four times a year, sophomore three times a year, juniors twice a year and seniors once a year. We invited some well-known professors, Ph.D. and academic leaders to come into the small classes to take part in the class meetings, and with the forms of making speeches, interviews, and seminars, and with the help of PPT and video clips, they answered the questions of the students and taught them how to study in the university.

Third, we set up student academic clubs, which could help the students realize their dreams of innovation. Since 2004, with the help of high-level research center in our department, HIT set up 11 student academic clubs, which include the undergraduates, masters, and Ph.D. And we set up HIT-ACM innovation base and Robot Olympics innovation base. Through the methods of organizing academic salons regularly, involving in research, and participating innovative competitions, we provide the students and teachers with great chances to communicate with each other deeply. Also it can strengthen the students' enthusiasm for innovation. Robot dance team successfully took the stage of CCTV Spring Festival Evening Year of the Dragon, and the performance showed the perfect fusion of art and technology vividly, and it achieved great response in campus.

c. The peers who can act as the model lead the others to make progress, which can also stimulate them to grow up.

If the students want to complete their academic planning and achieve their academic goals, having academic orientation and academic planning is not enough and the key is to have the right approach. So among them we need to select the “peer models” who have the same background and the same language as theirs. Since they have similar values, lifestyles and life experiences, so it makes much easier for the other students to convince and imitate. And we can lead the students to learn how to learn professional basis, how to participate in scientific and technological innovation, how to participate in volunteer activities, how to train workplace skills, how to develop communication skills, how to prepare for study abroad, and etc. much better. They can inspire and help each other forward, so the students can know what they should do every day and have the motivation to achieve each goal.

We adhere to use the goal of training talents as the standard, and also we focus on selecting the advanced models who are close to the student`s needs, and who are popular among the students. Our department adheres the belief that “there must be great fragrant grass within ten steps, and the advanced models must be among the students”. The events, such as “Fengyun 10”, “.Yoyo Billboard”, “The party members’

growth story”, and “sharing the story of self-improvement”,” Awards appraised meeting” are extensively developed in each grade. And the events have had explored and selected many advanced models among the students, and more than 40 amiable, trustworthy, and excellent typical models who can be learned from, can stand out among the students every year. We carry out deeds report hierarchically, which could cover all the students and achieve the depth of coverage. Our department has already held the “Guang Xi Forum” for more than 600 times continuously, and we adhere to carry out "Youth • Mission" College advanced deeds report twice annually. In addition, we adhere to carry out advanced models show, exhibitions of outstanding innovation works, and the events in which outstanding innovation teams can show their works annually. And it also helps the department to create a good atmosphere for the students to compete for innovation. Each grade sets up the grade model libraries, such as, "school tyrants Union", "Great God committee", "the plan of letting the graduate students make friends with the undergraduate students”, and they held the “HIT communicating technology” learning-seminars, “Gui Pai Nei Gong” study tour report regularly. In addition, they use the method of letting the graduate student party members to help the freshmen one to one, and this could help the models to come close to the students.

The propaganda of innovation advanced models let the students love listening to the stories of the models and love learning from the deeds of the models. On the basis of traditional report, we use the methods of using the DV as the warm-ups, combining PPT to report the deeds, and letting the close friends of the models come to the scene to tell their own experiences, to show the models vividly. Our department adheres to combine the academy awards appraised process with the propaganda of innovation advanced models, and we organize many students to act as the judges. Through the ways of speaking on the stage, asking under the stage, answering on the stage, and making feedback under the stage, all the students present are immersed in the mutual exchange collisions as protagonists. Our department attaches great importance to new media applications. We make propaganda graphic design for the models, and in addition, we filmed the “back” series DV video clips and uploaded them to some common network platforms which students often visit , such as, Youku.com, Renren.com, and Weibo.com. And the video clips can strongly echo and reinforce the reports.

With the method of leading by the models, HIT computer science and technology department carries out studies planning effectively, so that the students can have a clear direction, a reasonable path, scientific methods, and their learning outcomes have been fully guaranteed. The students have good achievement in various competitions, and for the past 5 years, cumulatively, in various scientific and technological competitions, they gained international awards 143 times, national awards 103 times, and provincial and ministerial awards 329 times. Student's abilities and qualities are favored by the society and employers. Graduate employment rate maintain 100% for 10 consecutive years, and the average of the undergraduate employment rate for 10 years is 91.6%.