

Research on Training of Logistics Management Professionals Based on Brain Science

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Abstract—The application of brain research results in teaching is the general trend of educational development. On the basis of the research of brain science and education neuroscience, this paper puts forward the demand for the training mode of logistics management professionals. The training practice of logistics management professionals is carried out from the aspects of talents training target, teaching mode, curriculum system and supporting guarantee, which can promote and realize the development and all-round development of students' personality. We should mobilize the enthusiasm and initiative of students in learning, so that students can learn to apply their knowledge and achieve their goals in learning, so as to create innovative and applied talents that meet the needs of society.

Keywords—Brain science; Logistics management; Talent training; Education reform

I. INTRODUCTION

Human society is gradually moving towards a smart era with innovation, creativity and creation as its core characteristics. Higher education also needs to cope with this change, and cultivate cognitive talents to adapt to the era of wisdom and lead the development of the wisdom era[1]. The brain is the organ and tool for learning. Understanding the ways of brain and nerve activity helps to understand how people learn and to improve university teaching accordingly. It is beneficial to explore more effective learning methods, teaching methods and evaluation methods, and to innovate the training model of talents. The research results of brain science have been effectively applied to education and teaching, and have become one of the most advanced applied research topics in education and brain science research.

With the continuous advancement of China's "One Belt, One Road" strategy, Xi'an, as the starting point of the "One Belt, One Road" and the national central city, has not only increased the demand for logistics talents, but also has a qualitative improvement. All education is inseparable from the individual being educated. The innate characteristics of the individual also determine the quality and achievements of the educator. The talent education in colleges and universities is essentially the construction of the human brain. Therefore, the research on the training mode of the logistics management professionals must be based on the correct understanding of the law of human brain development. Using the relevant research results of brain science and educational neuroscience, we will

effectively improve the quality and efficiency of personnel training[2].

II. THE THEORETICAL BASIS OF BRAIN SCIENCE AND EDUCATIONAL NEUROSCIENCE

The brain is the learning organ and the basic way and method for people to adapt to the outside world. The scientific research of the brain begins with the anatomy of the brain and the stage of brain damage research. These two types of research have accumulated a large amount of anatomical knowledge about the brain and brain nerves, which are the important basis for the research of brain science. In the 1980s, nuclear magnetic resonance imaging (MRI) and the comprehensive discipline of brain structure and function were aimed at revealing the mysteries of the higher consciousness of the human brain[3]. It was closely related to and intersecting with some interdisciplinary subjects such as psychology, artificial intelligence, cognitive science, creativity and education. The cognitive theory of learning related to brain science mainly includes the following aspects[4].

Human brain cognitive mechanism: People's learning process begins with the stimulation of the brain by the learned knowledge[5]. The stimulation signal first triggers the emotional response of the human body. At the same time, it reaches the advanced regions such as the visual cortex, the prefrontal cortex and the hippocampus through the thalamus. The process of memory processing and cognition is a process of active selection.

Human brain memory mechanism: Memory marks are first produced in the hippocampus and then uploaded and stored into the cerebral cortex. The structure of the hippocampus plays a key role in the transformation of new memory to permanent memory[6]. Memory is divided into sensory memory, short-term memory and long-term memory. Information enters short-term memory from sensory memory, and finally enters long-term memory. The mechanism of human brain memory is shown in Fig. 1.

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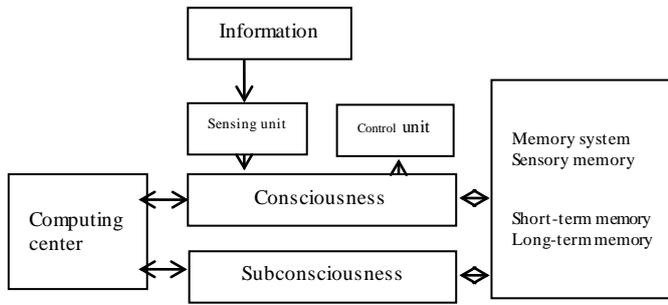


Fig. 1. Human brain memory mechanism

Human brain learning mechanism: Associative memory and pattern recognition are the two core functions of human brain. In the learning stage of knowledge, association is associated with the characteristics of existing cognition through association, and then the pattern recognition function is turned on to see if the new knowledge and the original cognition belong to the same essential attribute. By recognition, if it is in conformity with the original cognition, it can be assimilated, for example, the discovery of fruit pattern recognition has essential differences. Adjust the cognitive structure and construct new knowledge[7].

Human brain incentive mechanism: The link between the motivational and cognitive blocks of the “estimate reward value” in the brain is the key to improving performance. This link is fully mature at age 25. As college students grow older, they are more likely to strive for good performances when faced with high-value goals.

According to the research, learning mainly includes two links of learning and memory. Learning is the process in which the neural network receives and processes external information and changes its structure to cause behavior changes. Memory is the process of information storage and extraction.

III. DEMAND OF PERSONNEL TRAINING MODE FOR LOGISTICS MANAGEMENT

Informatization and artificial intelligence have reduced the importance of memory, and adaptive learning ability and creative ability will become more important. The traditional education of logistics management is discipline-oriented. It follows the principle of professional setting according to

discipline. The educational model tends to solve the scientific model of certain, linear and static closed problems. The knowledge structure emphasizes the systematic and completeness of the subject knowledge system. Teaching design pays more attention to the teaching of knowledge, but to some extent ignores the demand for innovation and entrepreneurship, and does not consider the differences in learning ability of individual students in the setting of talent training programs. Based on this, how to transfer the focus of teaching from knowledge memory to capacity cultivation, and repeatedly form a strong and stable neural network, it is necessary to train talents in logistics management. Firstly, according to the differences of students' learning ability, we set up the training targets for different levels of students. Secondly, motivational motivation and novelty incentive are adopted, and the students are encouraged through learning goals, and the same content can be repeated in many ways through teaching design to keep the brain excited. Brain science believes that at the age of 18-25 years, the focus of brain development is abstract thinking and rational thinking ability. Therefore, it is important to develop the rational and rational thinking ability of college students as an important task for the training of logistics management professionals.

IV. THE PRACTICE OF TRAINING MODEL FOR LOGISTICS MANAGEMENT PROFESSIONALS

A. Determine the training objectives and teaching mode of logistics management professionals

The training goal of logistics management specialty is to be oriented to the logistics industry, and cultivate advanced technology specialized talents with innovative spirit, entrepreneurial ability and sustainable development ability. Therefore, in the course of teaching logistics majors, we must establish a "student centered" concept of all-round development of teaching, which advocates "teachers as the leading, students as the main body", students are responsible for their own learning, and plan their own learning activities. The school and teachers according to the characteristics of the students, each course will stratify students' learning ability and interest points, cultivate students' interest, provide students with sufficient learning resources and guidance; advocate students "self-education, self-management, self-service" and build "by students". The teaching mode of the center is shown in Table 1.

TABLE I. LOGISTICS MANAGEMENT PROFESSIONAL TEACHING MODE

Teaching Design	Student Level		
	Basic learning layer	Improve learning level	Innovative learning layer
Teaching Objectives	Train students to master basic knowledge and basic experimental skills	Train students' ability to apply the theoretical knowledge of textbooks to practice	Train students to systematically use the knowledge, skills and techniques of various disciplines in this field to cultivate their interest in scientific research and to improve their creative ability
Teaching Content	Basic content	Improve content	Innovative content
Teaching Method	Students are required to learn and experiment according to the methods prescribed in the textbooks	The teacher sets up the path of completing the task in advance, lets the student independently or cooperate with other schoolmates, through teacher's instruction to complete the inquiry of the set task	Teachers only point out the direction of inquiry, do not lock specific tasks, and encourage students to design and accomplish tasks in their own way

Cont.to TABLE I			
<i>Counseling Method</i>	Through the teacher's demonstration operation, let students to verify imitation	Through the recursive guidance, teachers ask students to constantly question and dispel doubts according to the predetermined path, and guide the students to complete the task in the process of exploration	Teachers only determine the direction of inquiry, not clear specific tasks, students carry out research activities in accordance with the direction. The focus of teacher guidance lies in the inspiration of ideas, and through interactive discussions with students, broaden the students' thinking, so that students can eventually complete their tasks in their own independent inquiry.
<i>Sharing Platform</i>	WeChat public platform, Baidu SkyDrive, Internet Open Course, Microlesson, MOOCs	WeChat public platform, Baidu SkyDrive, Internet Open Course, Microlesson, MOOCs	WeChat public platform, Baidu SkyDrive, Internet Open Course, Microlesson, MOOCs

B. The curriculum system is closely linked

The curriculum system of the logistics management specialty should be aimed at the current situation of the development of the logistics industry, the learning characteristics of the logistics students and the demand for the logistics talents. At the same time, we should increase the practical links of the curriculum and take the "government, enterprise, race, learn and use" in order to cultivate the students' practical work ability. The curriculum can be based on general education, theoretical teaching, practical teaching, quality development, innovation and entrepreneurship education as the basic module, integrating and strengthening the comprehensive capabilities of system planning and design, logistics information technology application, international logistics. "Government" refers to the school's cooperation with the government and industry associations to provide students with an internship training environment and conditions. "Enterprise" refers to the school's close school-enterprise cooperation, introducing corporate mentors into the classroom, and the cooperative enterprises providing students with internship opportunities. Teachers can also enable students to participate in their horizontal subjects, and enhance students' interest in learning by way of spiritual encouragement. "Race" refers to the means or measures to stimulate students' interest in learning and learning enthusiasm for logistics professional courses, which are represented by a variety of professional competitions, competitions and professional qualification certificates with high authority and extensive participation. "Learn" refers to students' theoretical knowledge learning in schools, and the use of hardware and software provided by laboratories to enhance their professional knowledge. "Use" is a teaching concept of logistics specialized course that embodies "customer demand". The "customer" here is not only the object of teaching, but also the employer after graduation. But in the final analysis, it refers to the employers of logistics graduates. Therefore, "use" should always adhere to the application oriented, so that teaching contents and practical application can be seamlessly connected. Based on this, we build logistics management professional teaching design model, as shown in Fig.2.

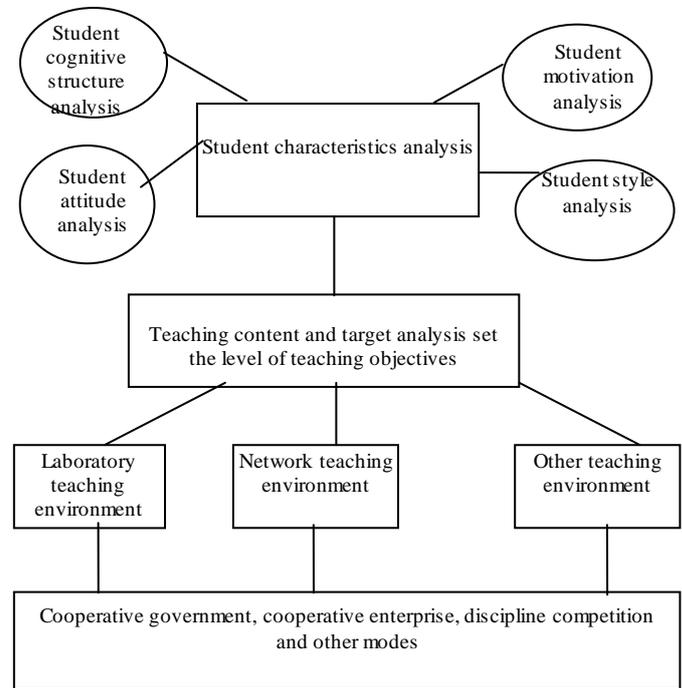


Fig. 2. Logistics management professional teaching design model

C. The guarantee mechanism of teaching implementation

The relevant theoretical results of brain science in teaching point out that we should respect the inner law of the brain, make use of the multi-modal processing mechanism of the brain, promote the interaction between cognition and emotion, and balance the relationship between pressure and learning challenge. Based on this, logistics management professional teachers should be familiar with the teaching rules and neuroscience characteristics. In the aspects of teaching content setting and teaching mode, we should use project oriented system and group competition system to promote the creative activities of brain thinking, integrate knowledge, structure the chemistry department and improve the students' learning effect. At the same time, other relevant departments of the school, such as the student department, the teaching department, the accommodation management office, etc., must work together to ensure not only adequate sleep, but also to ensure students' moderate sports and leisure, to create a good interpersonal atmosphere for students and to promote the cultivation of their emotions.

V. CONCLUSION

Brain science is the science that studies the essence and law of brain cognition, consciousness and intelligence. It can help us to better understand the laws and characteristics of individual development. In the context of strong demand for logistics talents in society, as a university that cultivates logistics management talents, it needs Further study the research results of brain science, better understand the occurrence and process of student learning, scientifically and rationally set up the curriculum system, and use a variety of practical teaching modes to teach students in accordance with their aptitude and cultivate more professional talents suitable for social needs.

REFERENCES

- [1] Zhao Juming. Open the black box: the scientific basis for learning and development (Part 1) - Research on "student centered" undergraduate teaching reform research[J]. Higher Engineering Education, 2017 (3): 31-52.
- [2] Liu Chunlei, Chen Ruiyuan, Feng Yidong. The theory and practice of educational technology from the perspective of brain science [J]. open education research, 2009 (6): 40-45.
- [3] Xu Xiangmin, Lee Jung, et al. Innovative and entrepreneurial talents training in electronic information specialty under the guidance of innovation strategy [J]. Higher engineering education research, 2018 (2): 153-164.
- [4] Wang Qiang, Li Wen, et al. Discussion on the training mode of Applied Logistics Engineering Talents Based on OBE education concept. Journal of [J]. Heilongjiang Academy of Engineering, 2017, (02): 77-80.
- [5] Yang Liqing. Design and research of hierarchical teaching mode based on WeChat public platform [D]. Beijing: Beijing Jiaotong University, 2016.03
- [6] Cui Ya Meng. A preliminary study of learning mechanism in the perspective of cognitive neuroscience [D]. Kaifeng: Henan University, 2017.05
- [7] Huang Yong. Attempt at teaching strategies based on brain science [J]. Education and teaching, 2017 (8): 4-7.