Ekoloji 28(108): 539-543 (2019)

LETTER TO THE EDITOR

New Media Ecological Condition Art Teaching Model Based on Brain Neuroscience

Zhiyuan Ma[1], Jingjing Guan[2*]

[1]School of China & Korea New Media, Zhongnan University of Economics and Law, Wuhan 430073, China;

[2]Institute of Education Sciences, Wuhan University, Wuhan 430072, China

[*]E-mail: ajgkag5621@163.com

New media art education is the perfect combination of art and technology, which can promote the cultivation of comprehensive talents with artistic quality and technical ability. The introduction of brain neuroscience has brought about breakthroughs in the study of new media art education. The essence of the human brain is explored by brain neuroscience to enhance the teaching effect of new media art. From the three aspects of emotional neuroscience, mirror neurons and brain functioning mechanism, the laws of brain neuroscience are summarized. Then, the application of this law in the teaching of new media art is studied. The experimental results show the superiority of the teaching mode proposed in this paper.

Brain neuroscience; new media; art teaching model; brain operation

1 Introduction

With the rapid development of the Internet, the development of new media ecological condition art teaching in education is inevitable. The rise of it in higher vocational colleges is in line with the trend of the development of the times. In the teaching application of higher vocational colleges, more and more mature new media ecological condition art teaching has played the positive role in promoting the development of students, but the scope of the study is small (Mackenzie 2017). The methods and prospects of art teaching in contemporary Chinese universities point to the fact that today's truly good artistic creations are inseparable from the guidance of high-level ideas, and the classic works of art scholars all come from the deep understanding of their artistic creation (Aguilera 2018, Ata Korkmaz 2019). At the same time, it incorporates deep philosophical thinking. Another important reason for the separation of learning and creation is that some scholars have serious prejudice. It is not too difficult to accept artistic creations into the classroom, but it is not easy to actually do it. Universities with art majors must have highly qualified teachers and well-equipped equipment so that each student can be taught and thought out (Alonaizi et al. 2017). Therefore, the improvement of art teaching methods has far more impact than just engaging in a part of professional art, which will affect the entire society (Wang and Wang 2017).

Li and Song (2019) published an article in 2019 in the journal Ekoloji, Issue 107, entitled "Research on Promotion Methods of Positive Mental Health of College Students under the Model of Ecological Sports Teaching." How to accurately and effectively improve the recognition rate of psychological problems by means of mathematical means and various models is an important problem facing the positive mental health care. In this

paper, the concept of neural network is given, and the basic principles of BP neural network and RBF neural network are compared. The paper gives a positive mental health assessment model for college students based on BP neural network and RBF neural network. We compare the absolute error of the results of the two models and draw a conclusion that the RBF model for college students is more excellent. From the perspectives of establishing equal teacher-student relationship, grasping the opportunity of education fully and adopting the method of game teaching, we can effective promote of the positive mental health level of college students.

The new media ecological condition art teaching model based on brain neuroscience proposed in this paper requires that the teaching method should conform to the laws of brain neuroscience. Humanized teaching is combined with the laws of brain neuroscience to achieve the best results of new media ecological condition art teaching.

2 Methods

2.1 The laws of brain neuroscience

Brain neuroscience mainly studies how the brain and the mind work (Gao 2017). It covers a wide range of research topics. This paper mainly studies the three parts of emotional neuroscience, mirror neurons and brain operation rules.

2.1.1 Emotional neuroscience

Emotional research has become the hot topic in contemporary cognitive neuroscience. Brain science believes that emotion is an important part of the cognitive process. Any decision is the process of interaction between reason, emotion and brain. Emotional neuroscience explores the brain's neural mechanisms of emotions, discovers brain regions associated with cognitive and emotional activities, and confirms that the relationship between cognition and emotion is interdependent and integrated.

2.1.2 Mirror neurons

As one of the greatest recent discovery in the field of neuroscience, mirror neurons are gradually becoming a research hotspot in psychology, neuroscience and cognitive science. It find that there are mirror neurons in the brains of humans, primates, birds and other high-level animals (Sun 2017). Mirror neurons reveal that physical education for quality educators is more important than language education because university students imitate the behavior of educators.

2.1.3 Brain operation rules

The functioning of the brain, especially in learning and memory, can help us adopt appropriate quality education strategies. Brain neuroscience believes that learning is the process of constructing neural networks by external information. Vision plays a pivotal role in learning and memory. Brain neuroscience has found that the human brain is characterized by good memory. The message is presented in text, and after 3 days we will only remember 10% of its content. If this information is added to a picture, 65% of its content will be remembered. Pictures are more attractive to convey some kind of information to people. The current innovations in brain neuroscience are as follows: creativity is the result of left-to-right brain cooperation, emotional state can influence the operation of creativity, and free association ideas contribute to the development of creativity. Intrinsic motivation contributes to the creation of production, working memory affects creativity, high creativity is associated with brain disease, and creativity is based on brain plasticity. Brain science research shows that the generation and development of innovation ability is based on knowledge base and physiology. Therefore, in addition to paying attention to the knowledge base of university students, the physiological basis of the brain of university students need to be considered, because the brain science shows that the ability of people to innovate depends on the balanced

development of left and right brain functions, and the left and right brain activities cooperate. To this end, the traditional teaching mode of the quiet listening needs to be changed.

2.2 The application of brain neuroscience law in the teaching of new media art

The development of neuroscience has brought great development opportunities for education. At present, the theory and practice of higher education in China needs to combine the research results of brain neuroscience, summarize the teaching principles based on brain neuroscience, and apply it to the teaching of new media art. The specific application is as follows:

2.2.1 New media can mobilize emotional nerves and activate brain language processing areas

Studies show that changes in the brain occur during language learning, and new synaptic connections occur between nerve cells. The important advantage of multimedia courses is that multiple parts of the brain are instantly activated. After the learner listens to the language material or watches the visual presentation, the language information is processed and the learning activity is recorded. This process activates the language processing area in the learner's brain and ensures long-term effectiveness of learning. As the famous neuroscientist Hebbs said in 1949, language learning is the process of burning and energizing together with nerve cells. Multimedia courses in computer-assisted language teaching can provide such learning and can be repeated.

In addition, the input and context of visual materials play a key role in the language learning process. Displaying the image activates many areas of the brain, identifying the familiar image that links the brain to a variety of knowledge, concepts and related things. Images can also be used to explain the meaning of a series of sounds. Examples of such "image" teaching can be found in Knowles' works, First English and English for Success. This teaching can help learners speed up the process of language learning.

Multimedia courses designed using the combination and convergence of multiple media models is lively and rich, providing learners with practical opportunities. Vision and context are used to process language materials to ensure the effectiveness of language learning.

2.2.2 New media can mobilize mirror neurons to order the language input patterns and highlight language items

Choosing the most appropriate input language and order is another key factor in the success of multimedia courseware. The focus of language learning in the learning process is gradually demonstrated and expanded. As far as the language itself is concerned, the order of the language lies in the application of rules and logos.

Appropriate language input order will be of special help to learners to understand and master the basic grammar, semantics and language structure. The grammar can be likened to the trunk and branches of a tree, and the vocabulary and phrases are leaves. There are many leaves on the tree, but without the trunks and branches, the leaves are impossible to land. Therefore, the focus of language learning is to cultivate trunks and multiple branches, which is much more important than simply stacking words. Simply mastering vocabulary does not help much in the real improvement of language ability.

Once the trunk is built and the branches are generated, the lexical item becomes the essential language element. If learners often practice language, the branches will become more and more flourishing. When learner describes something, the brain seems to habitually automatically find a vocabulary suitable for the branch, which will make the language more fluent and easier to expand and extend the language learning. Designing the multimedia courseware that sequences language input patterns and highlights the strength of language items can ensure that language learning continues and effective.

2.2.3 New media can mobilize the brain to develop procedural memory

Neuroscientists believe that people have two different memories: descriptive (non-clear) memory and procedural

(clear) memory. Descriptive memory is used to remember special events or facts, and procedural memory is the memory of a series of sexual behaviors or skills learning. In language learning, vocabulary learning is the intellectual activity that relies on descriptive memory that remembers facts; Grammar learning is also intellectual activity, but it depends on procedural memory, because these two ways of memory originate from different parts of the brain's nervous system.

3 Results

The research conforming to the laws of brain neuroscience is applied to the teaching of new media art. The experimental subjects, investigation methods and research process are described as follows.

3.1 Research subjects

In order to explore the new media ecological condition art teaching mode that conforms to the laws of brain neuroscience, the feasibility and specific effects of the teaching model are studied. A total of 100 students from two classes in the first year of the school are selected as subjects. The high school class (1) is the experimental class (50 people), and the high school class (2) is the control class (50 people). Students are aged from 15 to 17 years old. Both classes are art special classes.

3.2 Survey method

Since this is a phased summary test, the self-evaluation and collective evaluation after the end of the course in the new media ecological condition art teaching experiment that conforms to the laws of the brain neuroscience are not discussed here. In this study, the author used written test and questionnaire survey. Both written tests are designed by myself, including listening (20 points), analysis of works (20), art knowledge (30 points) and art history (30 points), totaling 100 points, and the reliability of the previous test volume is 0.83. The reliability of the post-test volume is 0.84, which met the evaluation criteria with subjective questions. The questionnaire is also designed by itself, mainly to investigate students' interest in learning, learning style, classroom atmosphere and satisfaction with the classroom.

3.3 Research process

The 100 students are divided into two groups. The traditional teaching mode and the new media ecological condition art teaching mode are used to teach the same teaching content and conduct quizzes. Through the testimony, it is proved that the teaching of the new media ecological condition art teaching mode enables students to have the stronger understanding, mastery and use of new knowledge and skills. The specific comparison results of the teaching results are shown in Figure 1.

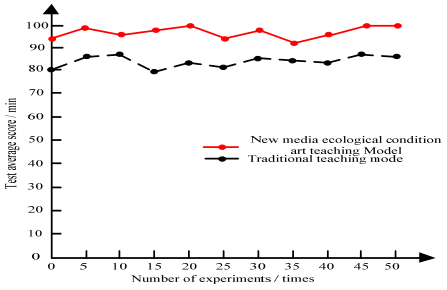

Figure 1 Teaching results comparison

4 Discussions

According to data surveys, the new media ecological condition art teaching model can be adapted by most

students. This mode of teaching stimulates interest in learning and creates a relaxed and pleasant classroom atmosphere. This classroom atmosphere guides students to participate actively in the interaction and increase their interest in learning. Through the application of the new media ecological condition art teaching model, the basic knowledge can be more deeply understood and mastered.

5 Conclusions

New media is becoming more widely used and is widely used in art teaching classrooms. The traditional art teaching mode exposes the disadvantages of too little interaction with students and low classroom efficiency. On this basis, the new media ecological condition art teaching model that conforms to the laws of brain neuroscience is proposed to develop students' visual and auditory systems and to optimize classroom outcomes.

Acknowledgement

This work was supported by Hubei Higher Education Teaching Research Project. "Construction of Advertising Training Teaching System Based on Industry Capacity Requirements" (No. 2016452).

References

Aguilera M (2018) Rhythms of the collective brain: metastable synchronization and cross-scale interactions in connected multitudes. Complexity (4212509)

Alonaizi MA, Parfitt GM, Kolisnyk B, et al. (2017) Regulation of cognitive processing by hippocampal cholinergic tone. Cerebral Cortex 27(2):1615-1628.

Ata Korkmaz HA (2019) Relationship between the earlobe crease and brain white matter abnormalities in apparently healthy subjects. Turkish Journal of Medical Sciences 49(2):604-609.

Gao KH (2017) New art teaching methods and means in higher vocational colleges under the form of microcourse. China Computer & Communication 67(1):81-84.

Li T, Song J (2019) Research on promotion methods of positive mental health of college students under the model of ecological sports teaching. Ekoloji 28(UNSP e107213107):1861-1868.

Mackenzie R (2017) Review of walter sinnott-armstrong, ed. finding consciousness: The neuroscience, ethics and law of severe brain damage. Am J Bioeth 17(5):64-66.

Sun HZ (2016) The methods and prospects of art teaching in contemporary Chinese colleges and universities. Hundred Schools In Arts 56(2):34-76.

Wang JP, Wang DQ (2016) Promoting the reform of methods and devices in art teaching -suggestions on how to improve the quality of teaching and talent training. Journal of Pla Academy of Arts 32(1):78-52.