

Construction of Foreign Language Learning Space From the Perspective of Embodied Cognition

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Abstract

The development of embodied cognition, which emphasizes that "cognition is rooted in body movements", makes learning space break through the traditional restrictions. The form and composition of learning space in the age of wisdom is an important content urgently needed to be explored and studied at present. Based on embodied cognition theory and learning space research, this paper explores the features and construction of foreign language learning space based on embodied cognition. Exploring the spatial construction and application in foreign language learning from the perspective of embodied cognition can not only promote the development of embodied cognition theory in China, highlight its practical guiding role, but also promote further research on foreign language learning space in China.

Keywords

Embodied cognition; Foreign language learning; Spatial construction.

1. Introduction

In recent years, research on foreign language teaching and learning in China has made rapid progress. However, how to improve the learning effect of foreign language learners has always been the focus of foreign language research. As a new direction of cognitive psychology, embodied cognitive theory has been widely concerned by scholars in various fields at home and abroad. Embodied cognition theory provides a new perspective for the efficiency study of foreign language learning.

2. The Theoretical Basis

2.1. Embodied Cognition Theory

Modern cognitive psychology emerged in the middle of 1950s, and in the 1980s, it has become prevailing in western psychology. With the development of cognitive linguistics, artificial intelligence and other disciplines, embodied cognition, as a new direction of cognitive psychology, has gradually become the focus of attention.

Eleanor Rosch, Evan Thompson and Francisco J. Varela, among others, have pointed out that "cognition depends on different types of experiences derived from the body having different sensorimotor abilities." [1] According to embodied cognition, human cognition is distributed in body, mind and environment, which are the basic elements of cognition and constitute a complete cognitive system.

2.2. Study of Learning Space

Research on learning Spaces began in 2003, and EDUCAUSE, a nonprofit organization in the United States, published a book in 2006 called *Learning Spaces*, edited by Diana Oblinger. In the book, she describes the important impact of learning space and the trend of learning space

design, indicating that the development of science and technology is both an opportunity and a challenge for the construction of learning space. Since then, the study of learning space has grown rapidly.

Learning space is a rising research carried out on the basis of technological development to meet the individual needs of learners and finally to realize learners' autonomous, flexible, efficient and engaged learning.

Learning space plays an important role in the process of language acquisition and is an important part of promoting effective learning. Embodied cognitive theory provides a new perspective for the construction and application of foreign language learning space, which creates a seamless integration of virtual and real environment for learners to conduct learning with ease and efficiency.

2.3. Organic Combination of Embodied Cognition and Learning Space

In 2017, the State Council of China released The 13th Five-Year Plan for the Development of National education, clearly pointed out to support schools at various levels to construct "smart campus" and explore future education teaching mode by comprehensive utilization of the Internet, big data, artificial intelligence and virtual reality technology, which undoubtedly provided a powerful policy support for the construction of foreign language learning space. The report of the 19th CPC National Congress further integrated online education into China's education system, which marked that online education has entered a new era and the design of learning space has become the core issue of the construction of online education environment. The close combination of embodied cognition and the construction of learning space just provide a theoretical basis for the construction of a new foreign language teaching and learning environment, lays a foundation for improvement of learning effect, and provides a strong guarantee for the cultivation of excellent English talents.

3. Characteristics of Foreign Language Learning Space Based on Embodied Cognition

Environment is an important factor in promoting cognitive development. Based on the properties of embodied cognition, this paper summarizes the characteristics of foreign language learning space as follows:

3.1. Unity

First of all, there is an organic connection between environment and elements. Through interaction, they form an integral whole. The change and development of foreign language learning space make cognition a complex and inseparable dynamic process.

3.2. Openness

Embodied cognition holds that cognition is an open and dynamic system of continuous interaction between body, mind and environment. [2] So, the learning space for embodied cognition has corresponding openness. The openness of embodied learning environment is firstly reflected in the openness of learning resources, which provides material support for the continuous interaction between body, mind and environment.

3.3. Contextualization

Embodied cognition holds that cognition is contextualized, rooted in real situations in real society. [3] Therefore, embodied learning space has the characteristics of contextualization. Situational learning is important because learners will apply what they have learned in different contexts.

4. Construction of Foreign Language Learning Space Based on Embodied Cognition

Embodied learning space is learner-centered and emphasizes the participation and perception of learners' bodies. With the development and application of new technologies, embodied foreign language learning space has gradually developed into a mixed reality space integrating physical space and virtual space. At the same time, embodied foreign language learning space pays attention to the creation of the situation and the construction of participation and experience environment, creates a positive and interactive communication atmosphere, promotes learners' cognitive participation and emotional experience, thus increasing learners' input and improving learning effect.

4.1. Entity Space of Foreign Language Learning

Entity space layout of foreign language learning should be selected and designed according to learners' perception of external objects, and try to give space for physical activities. In foreign language learning, layouts such as "U" table, round table or multiple combination can be adopted according to different learning objectives, content and teaching methods, and in this way learners will be given sufficient space to conduct learning activities in free interaction.

Both the "Pedagogy-spatial Technology (PST)" framework of Professor David Radcliffe and the "Framework for Considering learning Spaces in the 21st Century" of Joseph Perkins suggest that the design of physical and virtual learning Spaces should take into account the teaching methods and digital technologies adopted. So as to improve the effectiveness of learning. Access to computers, electronic books, interactive whiteboards, and operational learning software or modules that integrate physical participation into the learning process are also helpful for improving learners' performance, for example, smart classrooms in recent years, including multimedia classrooms and electronic whiteboard classrooms. The spatial layout of multimedia classroom has two common types—"seedling type" and "overlap U type". There are two common types of interactive whiteboard classroom space layout—"Seedling type" and "multi-group round table type".

4.2. Network Learning Space of Foreign Language Learning

Learning activities should not only take place in the entity space, like classroom, but should be extended outside the entity space, like network learning space. Network learning space is actually a virtual learning environment and a complex learning system. It is a chaotic and orderly organic system with the characteristics of openness, adaptability and integrity.

Augmented reality technology, learning analysis technology and other latest technology provide the possibility for the construction of learning space with physical and virtual integration. Computer network technology, virtual 3D-space technology, VR technology, artificial intelligence and other information technologies is the key to the construction of virtual foreign language learning space. The application of VR in the field of education has already become a trend.

Based on virtual reality, an "immersive" teaching can be involved into education. Virtual reality technology is combined with foreign language learning, so Students can wear VR glasses, as if entering a virtual three-dimensional world, to achieve multiple interactions between learners, objects and scenes so that the learners' cognitive experience can be strengthened as much as possible. Learners can be totally immersed in virtual space to create a strong sense of belonging and presence.

4.3. Creating Foreign Language Learning Situations and Interactive Atmosphere

In foreign language learning, it is critical for teachers to create situational space to guide learners to think from different angles and at different levels, to explore how to solve problems and make full use of all kinds of learning resources and cognitive tools. Foreign language learning, especially the foreign language cognitive process, is not a process of pure rational thinking but a comprehensive process of continuous interaction between body, mind and external environment.

The process of acquiring experience is the process of the learner's participating in practice and interacting with the environment and the process of transforming the abstract knowledge and principles into visual and interactive content. Through embodied experience, learners will increase their immersion, focus more on the learning content and activities, and make difficult content easier.

In addition, the emotional state and communication atmosphere of teachers and learners in the learning space influence the effect of learning activities. Emotions affect learning activities and learning efficiency. Therefore, the design of embodied learning space should consider the influence of motivation, emotion and other factors on learners' devotion and initiative. Teacher-student contact, student cooperation, quick feedback and high-quality communication all embody the interactive nature of embodied foreign language learning space.

5. Conclusion

Embodied foreign language learning space is a learner-centered space that emphasizes the embodied perception and participation of learners and highlights their dominant role in foreign language learning. Learners acquire experience by participating in practice and interacting with the environment. Embodied foreign language learning space enables learners to learn naturally and unconsciously, and promoting learning efficiency. Its advantages are extremely obvious, and it is the inevitable outcome of adapting to the world's foreign language reform and development.

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