CSCanada
Higher Education of Social Science
Vol. 24, No.2, 2023, pp. 33-39
DOI:10.3968/13007

ISSN 1927-0232 [Print]
ISSN 1927-0240 [Online]
www.cscanada.net
www.cscanada.org

Embodied Turn in Classroom Teaching Design in Open University-Based on Embodied Cognitive Theory Perspective

XU Xiaojing[a],*

[a] Ruian College of Zhejiang Open University, China.
*Corresponding author.

Received 8 March 2023; accepted 18 May 2023
Published online 26 June 2023

Abstract

With the deepening of teaching reform, classroom teaching design reform has become an important research topic. It is not difficult to find that the current classroom instructional design of the Open University still stays in the traditional paradigm of disembodied cognition", which will inevitably have a restrictive impact on the improvement of the teaching quality of the Open University. As an emerging research field in psychology, embodied cognitive theory contains rich educational and teaching implications, which provides new perspectives and enlightenment for the observation and examination of the teaching design of the Open University. In order to effectively achieve the goal of talent training, better reflect the principle of teaching according to aptitude, and effectively solve the needs of classroom teaching, this paper uses the embodiment, situationality and generativity of embodied cognitive theory as the guiding principles of teaching design, and puts forward the practical path of embodied turn in the teaching design of Open University: the establishment of embodied design framework, the construction of embodied teaching field and the implementation of embodied teaching process.

Key words: Embodied cognition; Open University; teaching design; embodied turn

Xu, X. J. (2023). Embodied Turn in Classroom Teaching Design in Open University-Based on Embodied Cognitive Theory Perspective. *Higher Education of Social Science*, *24*(2), 33-39. Available from: URL: http://www.cscanada.net/index.php/hess/article/view/13007
DOI: http://dx.doi.org/10.3968/13007

1. INTRODUCTION

Quality is an enduring theme of teaching, and improving teaching quality is of great significance to the Open University, which is undergoing transformation and development. On January 12, 2016, the Ministry of Education issued the *Opinions on Running an Open University Well*, which made very clear provisions on how to run an Open University as a new type of university from five aspects, including overall requirements, guiding ideology, main tasks, and organizational guarantees. In particular, targeted innovation requirements are put forward for the teaching quality of the Open University: it is necessary to further form an effective quality assurance system (Zhao, 2021), effectively strengthen the practical education link, and ensure the cultivation of innovative application talents. However, it is obvious that the existing classroom, which is the main implementation carrier of school education and talent training, is difficult to meet the needs of talent training due to its dogmatic, modeled, unitary, and static characteristics and classroom form (Wang, Liu, & Chen, 2014). In view of this, it is necessary to deeply analyze the relatively microscopic but extremely important link of China's current open university education--classroom teaching design, examine its existing problems, analyze the causes, and explore solutions to effectively improve the quality of classroom teaching. As an emerging research field in psychology, embodied cognitive theory has profound implications for the teaching design of the Open University with its rich teaching significance. This paper attempts to take embodied cognitive theory as the guide, take embodiment, situationality and generativity as the guiding principles of teaching design, and make a preliminary discussion and research on the innovation and optimization reform of classroom teaching design of the Open University.

2. EXISTING PROBLEMS AND CAUSES OF THE TEACHING DESIGN OF THE OPEN UNIVERSITY

Of the various theoretical foundations that provide a theoretical framework for teaching design, traditional cognitivism has had the most far-reaching influence. To this day, educators are still driven explicitly or tacitly to make decisions in complex pedagogical situations. The traditional cognitive view is based on the foundation of knowledge itself with certainty and unity, and regards teaching as a process of simply developing learners' minds, but in practice, this mind often points to a single thinking ability that is separated from the rich and complex environment of the outside world, and learning inevitably becomes an atomic and closed mechanical exercise process, and is considered to be conducive to the formation of knowledge and skills and the development of cognitive ability. Although the traditional cognitive view has made important contributions to the traditional classroom teaching design led by teachers with the main purpose of imparting objective knowledge, its theoretical value should also be affirmed. However, its drawbacks and shortcomings are also increasingly apparent, and the theoretical basis for teaching design for learners to actively construct knowledge and achieve meaning understanding is no longer sufficient. However, the essence of current classroom teaching is still to transmit information from teachers to learners as the main purpose, knowledge exchange and joint construction is basically impossible to talk about and a considerable number of teaching activities still stay at the level of one-way teaching, which is lack of people first, learner autonomy, initiative, inquiry, interaction and other learning modes. As Professor Ye Lan criticized, "the most fundamental defect of the traditional classroom teaching concept is to reduce the rich, complex and ever-changing classroom teaching to a special cognitive activity, and to abstract and isolate it from the overall life activities" (Ye Lan, 1997).

At its root, traditional cognitivism advocates mind-body duality in philosophy, attaches importance to information processing in psychology, and emphasizes ubiquitous computing in artificial intelligence, and its common denomination is the neglect of the body and experience and the emphasis on symbols and representations. From the perspective of dualism, that is, mind-body relations, traditional cognitivism belongs to the category of detached cognition, that is, it adheres to the idea of mind-body separation. In their view, based on the computational metaphor, the mind is considered to be the operation (calculation) of symbols according to some program (algorithm), and teaching is an abstract representation activity of a given mind. Continuing to follow the theoretical framework of the category of "disembodied cognition" cannot solve some key teaching design problems or improve the quality of teaching.

3. CORE CONNOTATION OF EMBODIED COGNITIVE THEORY AND ITS ENLIGHTENMENT FOR THE CLASSROOM TEACHING DESIGN OF THE OPEN UNIVERSITY

As a new research trend or research paradigm, embodied cognition was initially based on a profound reflection and critique of traditional disembodied cognition. The core connotation of embodied cognition mainly includes: First, it is advocated that the perception of the body is the basis for the production of behavior. The physical properties of the body, its state, and its perceptual motor experience alter cognition, which is generated by specific individuals in a real-time environment; second, embodied cognition, which insists that cognition is situational, shows its compatibility with situational cognition in this regard. Of course, unlike contextual cognition, embodied cognition sees the environment, bodily state, and brain as inseparability and trinitarian, and the environment is not external to cognitive activity, but is itself part of the cognitive system (Zhang & Du, 2015); third, the generativity of cognition, and the motor channels and dynamic systems of the brain and the body play an important role in the formation of cognition, and cognition is the result of interaction generation (Pan, 2023). At present, it seems that contemporary cognitive theory research has completed the paradigm transformation from detached to embodied, and embodied cognition is no longer limited to a concept originating from philosophy, but has been more and more empirically confirmed under the impetus of scientific experiments in the fields of experimental psychology, neuroscience and brain science. Especially in the field of education, it has gradually developed into a clear cognitive research approach, program and paradigm.

The classroom teaching design of the Open University carries out a hybrid teaching mode of online and offline collaborative development according to the dynamic learning needs of learners throughout their lives by taking the core literacy of the people as the cultivation goal. In order for the teaching of the Open University to truly get rid of the adverse influence of the "disembodied cognition" paradigm, it is necessary to grasp the embodied teaching design with "embodiment" as the main feature as a whole. Cognitive principles such as the core concept of embodied cognition, the mechanism of mirror neurons and the embodied nature of metaphors are relevant in the application of teaching design (see Figure 1). Embodied cognition has the theoretical characteristics of embodiment, situation, generativity and dynamic, and the teaching design of the Open University classroom from the perspective of embodied cognition should make full use of physical and perceptual participatory cognition, attach importance to life experience, promote the benign

interaction between learners and the environment, and establish a connection with the living world. By promoting learners' use of embodied cognitive learning methods such as sample imitation, social behavior, empathic arousal, physical participation, practical activities and embodied environment embedding in teaching, learners' internal drive is stimulated to make learning more profound and meaningful.

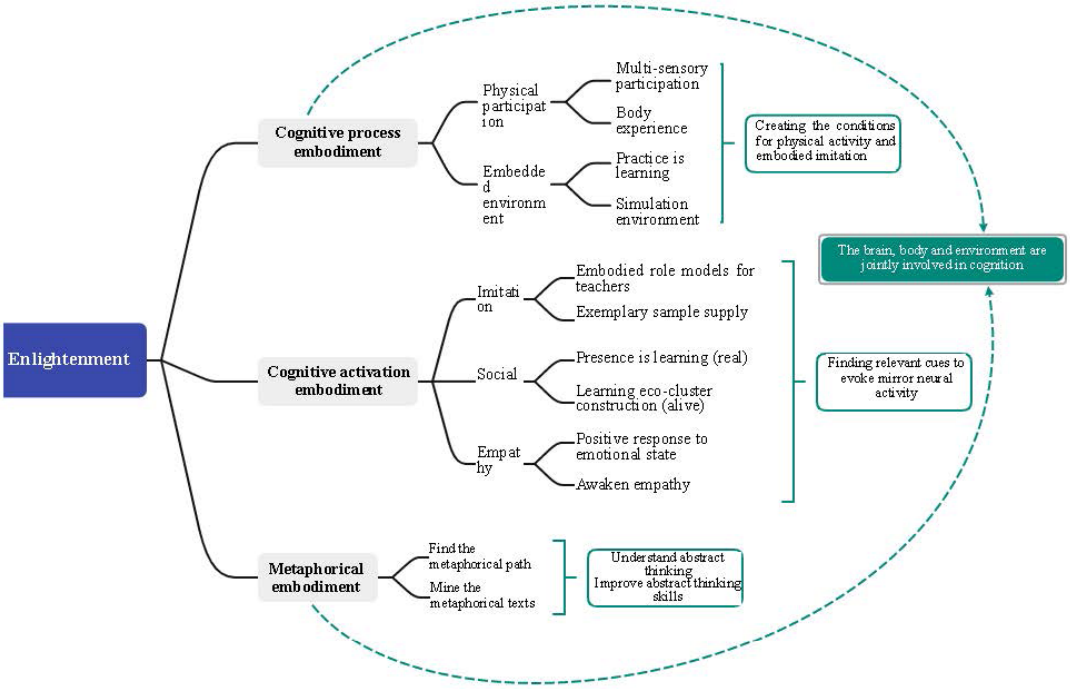

Figure 1
Implications of Embodied Cognitive Theory for Classroom Teaching Design

4. SIGNIFICANCE OF THE EMBODIED TURN IN CLASSROOM TEACHING DESIGN IN OPEN UNIVERSITY

Based on the above analysis, embodied cognitive theory takes a new perspective on how learners learn, how teachers teach, and how schools are organized. As a theoretical guide for the classroom teaching design of the Open University, it has the following three meanings to realize the embodied turn in classroom teaching.

4.1 Effectively Achieve the Objective of Talent Training

As an adult higher academic education, the Open University aims to cultivate application-oriented higher specialists. Although its professional education requires the learning of basic professional knowledge and basic theories and the cultivation of professional qualities, it places special emphasis on the application ability of professional theories and highlights the cultivation of professional skills and practical business processing capabilities. Different talent development goals require different teaching strategies. The famous British scholar Hayek believed that knowledge is divided into explicit knowledge and tacit knowledge. The former is explicit knowledge that can be clearly expressed. Related to conception, it is mostly professional basic knowledge and basic theory, which can be directly transmitted to learners through teacher teaching. The latter is implicit knowledge that cannot be clearly expressed. Related to skills, it is difficult to impart through teachers teaching learners audio-visual methods, but generally through practical teaching such as operation training or classroom simulation scenarios, and in the interaction between teachers and learners. If viewed from this theory, the objective of talent training in the major of the Open University is to master not only the explicit knowledge of professional basic knowledge theory, but also the tacit knowledge of professional skills and practical processing ability. To achieve such an objective of talent training, it is necessary to choose a training mode that combines theoretical learning with practical training, and adopt the strategy of emphasizing practical teaching on the basis of attaching importance to theoretical teaching, that is, on the basis of theoretical teaching in audio-visual teaching to achieve the purpose of cultivating learners' practical ability through the introduction of embodied teaching and strengthening practical teaching (Ding, 2020).

4.2 Better Reflect the Principle of Teaching According to Aptitude

Teaching according to aptitude refers to the selection of different teaching methods according to the knowledge

level and learning quality of different learners, so as to achieve differentiated teaching and help learners achieve the best development. At this stage, the academic situation of the Open University presents three characteristics: First, the basic knowledge of learners is weak. Learners with initial education degree of college degree are mostly higher vocational graduates, and those with initial education degree of high school are mostly secondary vocational graduates. It again shows the learners' poor learning quality. This group is relatively weak in terms of learning motivation, learning ability and learning habits. Based on this academic situation, the best embodiment of teaching according to aptitude is the introduction of the concept of embodied teaching. In terms of teaching methods, the transformation of teaching methods from teachers simply teaching to teachers guiding learners to participate in teaching and induce experience changes; in terms of teaching content, the teaching content has been transformed from teaching abstract concepts and theoretical knowledge to teaching both theory and case teaching. Through the innovation of teaching methods and the optimization of teaching content, learners' learning experience is strengthened and learners' learning effectiveness is improved.

4.3 Effectively Solve the Problems of Classroom Teaching

Due to various factors, there is still a "weaking, blurring and constraint" phenomenon in the teaching of the Open University to a certain extent. The first is the weakening of face-to-face teaching. Face-to-face teaching generally has a single teaching form, that is, teachers carry out cramming education, and the teaching content pays more attention to key knowledge and difficult knowledge, which is difficult to attract learners to participate and stimulate learners' interest in learning. Therefore, learners' learning ability and thinking quality cannot be improved, and literacy goals cannot be achieved. The second is online teaching blurring. Online learning is the most important learning pathway for Open University learners, but due to the lack of teacher management and interaction, online teaching resources are not fully and effectively utilized, so learning outcomes are not guaranteed. Third, it is the constraints of many factors such as school philosophy, education objects, teaching conditions, and school management, and practical teaching is diluted. If practical teaching is not strengthened, it will run counter to the talent cultivation objective of the Open University. The embodied teaching concept is introduced to activate learners' cognition, trigger learners' multi-form embodied perception and experiential learning as the value orientation, and effectively solve the problem of "weaking, blurring and constraint" in classroom teaching.

5. PATH OF EMBODIED TURN IN THE CLASSROOM TEACHING DESIGN OF THE OPEN UNIVERSITY

5.1 Theoretical Path of the Embodied Turn in the Classroom Teaching Design of the Open University

Embodiment, situationality, generativity and dynamic are the guiding principles of the classroom teaching design in Open University, so that embodied cognition can be truly integrated into the whole process of classroom teaching and learner development.

To adhere to the principle of embodiment, a good job should be done for the following three things: first, build a embodied environment assisted by artificial intelligence, second, scientifically design embodied teaching and practical activities according to teaching objectives, and third, fully develop and utilize embodied learning resources and related tools. Its ultimate goal is to provide learners with external conditions for specific experiences of things, so as to maximize the all-round integration of various organs of the body into the environment, thereby generating a sense of immersion in learning, realizing interactive experience in virtual space and real space, and creating an embodied learning environment with multi-sensory participation, real experience, deep interaction and intelligent support services for learners.

To adhere to the situational principle is to emphasize that learning is present, connected, interactive, and higher-order. Therefore, the Open University should focus on the teaching ideas of embodied interaction and situational penetration, promote learners' life experience, interactive teaching interaction between learners and deep interaction between learners and the world, and create an embodied situation of returning to life and putting into practice. Through in-depth analysis of the mapping mode of metaphor and metonymy, learning should be placed in a larger space of physics, society, culture and history through the meaning expressed by metaphor, so that learners can establish the connection between their own experience and learning content, so as to achieve the purpose of embodied understanding of abstract cognition.

To adhere to the generative principle is to see cognition as the result of the interaction of the learning subject with the external world. Teaching is not a "symbolic or connectionist process" and therefore not a representations process, but a continuous process that presents dynamic development over time (Qiu, 2013). Obviously, from the perspective of embodied cognition, teaching is no longer a linear process of certainty, let alone a process of finding weighty evidence for clear arguments. Teaching is the process that teachers and learners cooperate to explore subject knowledge and life problems, cooperate in constructing ideas and meanings, listen to and dialogue

with each other, and jointly create ideas, so as to realize self-experience and experience sharing (Zhang, 2013). Teachers need to consider whether to perceive learners' emotional experience and support learners and whether timely feedback and external factors affecting motivation affect the impact of teaching.

5.2 Practical Path of the Embodied Turn in Teaching Design of the Open University

5.2.1 Establishment of the basic framework of embodied teaching design

The teaching design of the Open University should not be limited to the technical operation category, but more importantly, consider the transformation and replacement of its cognitive theoretical foundation. Without the subversive challenge and change of the embodied cognitive theory on which traditional teaching design is based, the classroom teaching design, regardless of its process and outcome, is likely to "run counter to our original intention" and fall into the repetition of past practice. From a concretely cognitive perspective, teaching should not be seen as how to control what happens, but how to consciously promote the unfolding of possibilities. The corresponding instructional design is no longer just about providing specific actionable steps, but about preparing for more possibilities in teaching. Based on this basic understanding, we suggest that embodied teaching design can follow the design idea (as shown in Figure 2) as the basic framework.

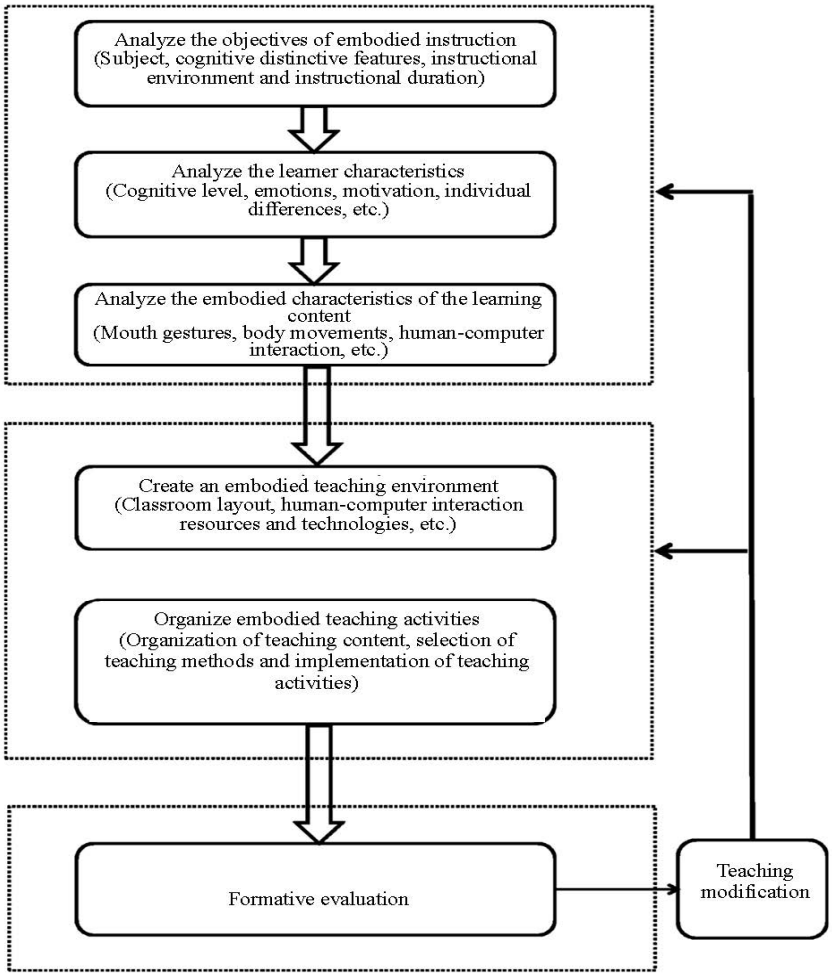

Figure 2
Embodied Teaching Design Framework

5.2.2 Construction of a teaching field that integrates "body-mind-situation"

Embodied cognition opposes the separation of body from mind, self from others, individual from collective and cognition from knowledge, and functional psychologists point out that it is wrong to separate experience from reason. (Dewey) All rational thinking is based on bodily experience. Researchers in cognitive science, philosophy, robotics, and linguistics are increasingly aware that the representation and manipulation of cognition is rooted in their physical contexts. Without intuitive cognition, learners' abstract thinking becomes water without a source (Zhang, 2013). Based on this, the occurrence of deep learning should be established in a embodied teaching

field closely integrated with "body-mind-situation", so that learners can immerse themselves in it, and teachers and students evaluate and feedback based on evidence, so as to promote learners' deep participation and constructive generation. In the construction of the embodied teaching field, teachers take the theme as the rule and take the learners' learning as the logical starting point to design the big situation linked to the actual situation (Luan, 2023), design output-oriented learning tasks with real meaning, and build scaffolding for the meaningful learning of learners. With the support of teacher demonstration, guidance and scaffolding, learners experience the experience process of "learning, thinking, questioning, discerning, using, and understanding", achieve knowledge goals, skill goals and thinking quality, and improve core literacy goals. The embodied teaching field requires teachers and students to jointly create a suitable emotional atmosphere and classroom environment, and create a two-way interactive teacher-student exchange and discussion learning environment in a specific situation, so that learners can feel, recognize, think, experience and perceive in an autonomous and unique way through hands-on experience and practical activities, and then gain new knowledge and new skills (Zheng, et al., 2021). (as shown in Figure 3)

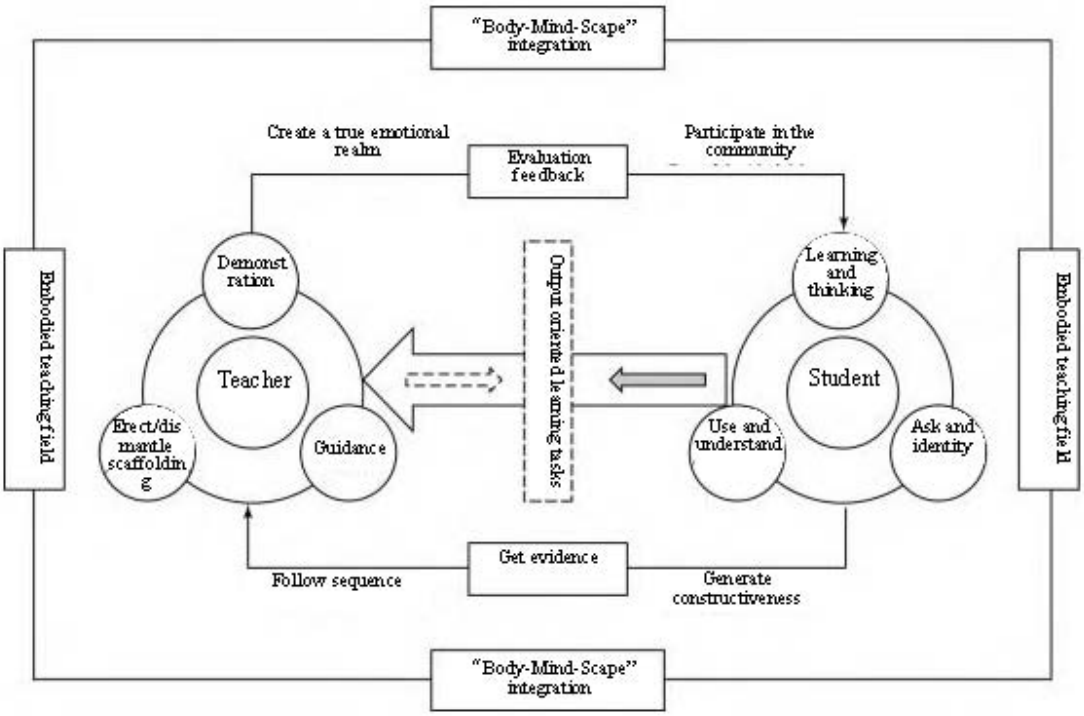

Figure 3
Embodied Teaching Field

5.2.3 Implementation of the teaching process of "autonomy-interaction-generation"

An important aspect of embodied cognitive research is the introduction of the concept of "dynamical systems" to show that cognition is not an event that occurs in isolation and is confined to the brain. The occurrence of cognition has an emergent dynamic mechanism, and the process of cognition is the emergence and generation of self-organization through the brain, body and environment that are interconnected, coupled or interacted. As a dynamical system, teaching has the general characteristics of a dynamical system, whose future state depends on the current state, and the factors that determine the current state are all in an active state in the interaction. From the perspective of embodied cognition, the dynamics of the teaching process of the Open University should recognize the results of the current dynamic research and practice of hybrid teaching on the one hand, and on the other hand, it is necessary to continue to deeply explore the physical mechanism of online and offline hybrid teaching dynamics on the basis of drawing on the research of embodied cognitive dynamics. In the hybrid teaching mode, learners need to consult and self-study course-related materials on the Internet, then have more in-depth exchanges and discussions with classmates in the classroom, and finally sublimate the classroom theme under the guidance of teachers to achieve the transfer, expansion and application of knowledge. In order to better achieve the goal consideration of teaching embodiment, teachers should maximize learners' independent learning, interactive learning and experiential learning.

First, in terms of online teaching, the first is to strengthen the construction of micro-course resources and provide learners with content system and quality assurance

micro-course resources. The second is to do a good job in micro-course learning guidance to help learners adapt to and be good at using online micro-course teaching as soon as possible. The third is to do a good job in micro-course learning and resolving and help learners solve learning difficulties in time. Finally, based on the data analysis of learning platform, such as learning time, number of posts, quality of completed exercises, etc., understand the learning situation of learners, and incorporate the supervision situation into the consideration of course's formative assessment. In short, online independent learning is not laissez-faire and teachers should have non-real-time and non-explicit interaction with learners, induce the advantages of embodied learning of learners, and provide data support for offline teaching content.

Second, in terms of offline teaching, teaching should reflect the dynamic process of learning as a changing, dynamic, continuous, interactive and non-static representation. First, teachers should pay attention to visual data analysis, the arrangement and creation of the physical environment, psychological support in the virtual environment and other important factors affecting cognitive generation, give play to the permeability of the environment, optimize the dialogue environment, and promote the interaction between the learners' subject and the external world. Second, teachers should build scaffolds for the entire independent learning process of learners, and the scaffolds should be provided with specific guidance and motivation support in different stages in the learners' recent development area, and learning activities have different design and support priorities at different stages, providing learners with interactive platforms and interactive opportunities. Third, in actual teaching activities, teachers need to feel the stimulation information received by the body senses in a timely and multi-party manner, and have an overall perception of the situation at the teaching site and the state of the learner. For example, teachers can make full use of vision to observe the learning state of learners and judge the current teaching situation; use hearing to listen to the tone of voice and state of mind of learners when answering questions, use the whole body mechanism to feel the atmosphere of the teaching site, and think about the dynamic generation of teaching methods, teaching materials, teaching methods and teaching evaluation in the next step.

6. CONCLUSION

With the deepening of the education reform in the Open University, teachers should continue to pay attention to and learn the latest progress in the field of cognitive science, carry out targeted research on the theoretical and applied aspects of the learning process, learning environment and learning methods, and take the embodied cognitive view and the latest achievements of learning science as the basic concept in the teaching design of the Open University. Under the guidance of embodied cognitive theory, teachers should always highlight the subjective position of learners and regard learners as essential beings with introspective interaction with the environment, create embodied teaching areas, use teaching methods automatically and interactively generated to always respond to learners' learning status and lead learners' self-directed learning and truly realize the integration of situations and the use of body and brain in the classroom to stimulate and maintain learners' learning motivation and learning engagement. In addition, teachers should always have a sense of reflection and introspection, analyze and evaluate according to the actual learning situation of learners and the actual teaching effect, maintain a high degree of prudence and dynamic adjustment, test educational practice with scientific cognitive theory, and further guide classroom teaching design.

REFERENCES

Ding, J. (2020). Pedagogical optimization strategies for undergraduate law major of open education from the perspective of embodied cognition theory. *Vocational and Technical Education, 41*(5), 31-36.

Luan, A. (2023). Embodied English teaching: origin, connotation, and strategies. *Modern Primary and Secondary Education, 39(*3), 10-15. doi:10.16165/j.cnki.22-1096/g4.2023.03.003.

Pan, Y. (2023). Meaning of teaching thinking and its cultivation strategy based on embodied cognition. *Theory and Practice of Education, 43*(10), 59-64.

Qiu, G. (2013). From disembodiment to embodiment: transition of contemporary thinking mode in teaching. *Theory and Practice of Education, 33*(1), 61-64.

Wang, J., Liu, Z., & Chen, W. (2014). Features of instructional design in the future classroom: A perspective from embodied cognition. *Modern Distance Education Research, 131*(05), 71-78.

Zhang, B., & Du, J. (2015). Smart classroom from the perspective of embodied cognition. *Invention & Innovation (Education Informatization), 580* (09), 4-8+17.

Zhang, L. (2013). Discourse analysis of OECD's policy of education equity. *Global Education, 42*(4), 27-32+67.

Zhao, F. (2021). From "disembodied" to "embodied": Innovation and optimization of teaching paradigm of Open Universities. *Journal of Ningbo Open University, 19*(4), 11-18.

Zheng, X., Zhang, Q., Xie, H., et al. (2021). Research on "Student-Centered" (SC) classroom teaching reform strategies. *Journal of Southwest University of Science and Technology, 38*(2), 89-95.

