Research on English Multi-modal Online Reading Mode Architecture under Multimedia Background

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Abstract
Expansible space of English teaching has grown with time in the process of continuous innovation and development of multimedia technology. 160,000 person-time online teaching has been achieved thanks to multimedia technology based on network extension direction. But large number of online students also affects teaching quality, thus causing the defect of multi-modal teaching context. Hence, this research suggested the innovation of English multi-modal online reading mode using different dimensions of multimedia technology, thus providing development conditions and academic reference for online teaching.

Keywords: Multimedia Technology, Multi-Modal, Online Reading, Network Architecture.

1. RESEARCH BACKGROUND

1.1 Literature review
Modality is the definition of human sensory interaction forms, such as stimulus or restriction of hearing and vision under the effect of external environment (Xie, 2017). Language learning is a process of objective cognition of abstract things and multi-modal cognition can use multiple language symbols, including music, color, picture, etc., during the process of language learning, thus cognizing language under extended communication media (Zhang and Xia, 2016). We can mark off the modality in human perception as base by reference to such cognition condition and then distinguish multi-modal formation conditions.

1.2 Research purpose
Theoretical research on multi-modality is later in our English teaching and the earliest popular teaching textbook is Advanced English: A Multi-Modal Video Course (Student). This book details the function of multi-modal language environment on improvement of students’ English practical competence (Hong and Liu, 2016). Rapid development of multimedia technology has created favorable conditions for extension of English multi-modal online reading mode and how to use multimedia technology to support online reading teaching becomes a main difficult point in teaching (Jian and Song, 2016). Therefore, this paper analyzed the compositions and extension channels of English multi-modal online reading mode and meanwhile put forward theoretical direction for building this mode to provide theoretical reference for online reading teaching.

2. THEORETICAL ANALYSIS OF MULTI-MODAL ENGLISH TEACHING

2.1 English teaching development under multi-modal teaching philosophy
First of all, taking traditional teaching as an example, expounding language learning symbols by fusing listening teaching separately is equivalent to individual teaching of hearing, and this can be regarded as “unimodal” language learning environment. Then, the process of taking blackboard-writing as traditional teaching tool, utilizing double effect of vision and hearing, and parsing English can be regarded as “bimodal” English teaching environment (Yin, 2013). At last, “unimodal” and “bimodal” types have weak effect on English learning and language learning is a process of understanding and the experience under multiple communication and ambience. So, group learning, discussion and communication, classroom questioning and other links are introduced during...
the process of continuous improvement of traditional teaching, and English knowledge also formed information dissemination mechanism and feedback mechanism in these links. Except hearing and vision, English teaching created “experience” language learning modality and has advanced by leaps and bounds under mutual permeation and effect of three modalities. But “three-modal” teaching as ultimate demand of language learning does not achieve the expected teaching objectives. So, the relevant scholars have carried out the research on multi-level teaching mode based on “N-modal” changed from “three-modal”. Analysis of multi-modality formation conditions shows that higher technological base and creating experience of multiple perception atmospheres for students can really extend multi-modal language learning environment. However, traditional teaching has no such technical conditions, so English teaching level ceases to advance for a long time.

2.2 N-modal formation conditions under the support of computer technology

This research introduces the concept of N-modality as for multi-modal language learning in view of multiple experience dimensions. N-level can be regarded as a set of experience dimensions of multiple language modalities. N-modal formation conditions can be realized after computer technology continuously develops and is widely applied in teaching environment (Meng and Liu, 2012). Basically speaking, multi-modality learning conditions cannot be realized by teacher’s blackboard teaching and actively using vision, hearing, taste, smell, touch and other sensor dimensions of students can guide N-modal hierarchical construction. This way is also teaching method of extension of information transmission channels. Computer technology infinitely extends teaching dimensions during the process of mutually fusing network, multimedia, Mooc, VKO and other technologies, thus reaching technical conditions of N-modal formation.

2.3 Support of multimedia technology for multi-modal learning environment

Multimedia is information transmission way based on various medium modes and formed by using two or more information expression ways to reach man-machine communication information dissemination and interaction mode. Using multimedia technology can realize various forms of text output of multiple language symbols in English teaching, such as picture, photo, film, voice, word, animation, etc. (Wang and Xu, 2012). N-modal formation conditions have been created during mutual interweaving and permeation of multiple language symbols, creating learning environment and understanding dimension with better experience for students, thus achieving the best English teaching result.

2.4 Online teaching mode from multimedia to hypermedia

According to analysis of development conditions of computer system, we can know that multimedia is a subset system of hypermedia in essence and hypermedia is global information interaction system built using hyperlink. In systematic frame of hypermedia, multimedia is equivalent to independent unit but does not introduce internet extension mechanism and hypermedia formed network application system based on UDP/IP protocol and TCP/IP protocol under the support of global information systm. Designing two-dimensional multimedia web page using HTML, XML, ENT and other technologies as three-dimensional multimedia web page based on VRML and other languages can apply multimedia in broader network space (Hao et al., 2011). English teaching has also extended to online teaching mode as hypermedia has developed so far. Development of online teaching mode also promotes technical demand of multi-modal language learning and students can communicate with students of different nationalities when learning language under network environment, which really bursts the time and space restraints. Students form overall language perception atmosphere naturally during the process of communication with foreign students and cultural cognition of native countries in this environment. Most research on online teaching also finds two disadvantages during its development. Firstly, multi-culture shock causes the cognitive disorder of inter-cultural communication, which is a constraint on multi-modal language learning and adverse to wide implementation of multi-modal teaching in multimedia technology; secondly multi-modal teaching should output final language information according to formation conditions of multiple technologies under network environment and such information is basis of multi-modal language learning. During the process of information dissemination, it is not easy to form explanation space of multi-modal context in network, so students cannot get the most direct guidance and instructions when having communication barriers or interaction resistance. Above two factors pose the obstacle of teaching mode and such obstacle is defect of online reading mode and how to solve such problems has become the most concerned focus in current education and computer technology fields.
3. COMPOSITIONS AND EXTENSION CHANNELS OF ENGLISH MULTI-MODAL ONLINE READING MODE

Extensive use of multimedia technology provides technical condition for online teaching indeed, but the condition should improve the integration of teaching resources under effective theoretical framework as well (Han and Guo, 2010). Therefore, this research designed English multi-modal online reading mode based on multi-modal language teaching theory and its theoretical framework is network system in overall optimization direction, of which three-dimensional elements are three modalities, namely teacher, student and evaluation mechanism. Figure 1 shows the theoretical model architecture.

![Figure 1. Multi-modal Online Reading Mode Architecture under Multimedia Background](image)

3.1 Compositions of English multi-modal online reading mode - multi-modal teacher teaching

Teacher multi-modality is an important condition of English multi-modal online reading mode, and in multi-modal language teaching construction, it is not the form that several teachers participate in teaching but the traditional teaching classroom of teacher changes into network teaching platform. MOOC platform has achieved most remarkable results in recent years. MOOC means Massive Open Online Course and it has a record of 160,000 person-time online teaching. This form extends the foundation of realization of teaching resources to a great degree and turns teacher resources into the promotion advantage of multi-modal teaching. So, this is as technological base of English multi-modal online reading mode (Gao, 2012). On the one hand, teacher can make PPT courseware to integrate online reading learning materials in the forms of word, chart, picture, audio, video and other informative texts and share teaching resources with more students. On the other hand, extension direction fusion condition based on multimedia technology and network channel can provide show materials of teaching resources via QQ, WeChat and other communication software, thus creating after-class extension of teaching time and space for English multi-modal online reading mode. What’s more, using these communication platforms strengthens interaction with students and eliminates the adverse factor that students’ questions cannot be answered timely in network teaching. Equivalently, the identity of teachers turns into the possibility of multilingual teaching after teachers use multimedia and network technologies, thus realized content and resource expansion of English multi-modal online reading mode and then constituting various conditions of this mode.

3.2 Compositions of English multi-modal online reading mode - multi-modal student learning

So-called multi-modal online reading mode means that English teaching materials spread through the network and turn into integrated output of graphics and text, video, audio and other multi-modal information. This form helps students understanding and knowledge internalization and motivates students’ subjective initiative after students change passive learning to active learning. Extension channel of multi-modal online reading mode should measure information dissemination way in student’s perspective and this form must conform to students’ learning
demand and psychological guidance condition of subjective cognition (Xiao and Chen, 2015). Students do not always have higher psychological demand for every learning resource under learning environment of English reading. Students with weak basic ability should be given simple reading materials and those with strong basic ability should be given deep reading materials to help them to improve basic ability and reading ability. For extension channel of this aspect, divide basic reading level of students firstly and then adjust the forms of teaching resources according to students’ cognitive ability and feedback information to find entry points of English multi-modal online reading mode from different levels of students and reach the best teaching result of improvement of reading ability of all students (Ma and Zhang, 2016). Conduct the integration of learning resources through multimedia technology for students and divide video, audio, graphics and text information to meet reading demand of students at different levels.

3.3 Compositions of English multi-modal online reading mode - multi-modal teaching evaluation

Sound evaluation mechanism should be established to evaluate whether teaching modes can achieve the expected teaching results, thus achieving favorable conditions for verifying teaching effect. Compositions and extension channels of English multi-modal online reading mode should form three evaluation ways in sound evaluation mechanism, namely, comparison of teaching resources, teaching information feedback and reading level improvement effect. First of all, comparison of teaching resources is comparison between online reading teaching content and traditional classroom teaching content. Fitness of offline and online teaching should be considered in case of multimedia dissemination of teaching materials. Usually, teacher’s guide can be added to classroom teaching using multimedia technology and students can easily enter teaching situation that teacher creates under the guide (Zeng et al., 2017). However, it is not easy to realize this teaching situation under network environment. Teacher and student on computer terminal have certain communication barrier, so this mode cannot form the advantage of real-time information communication. Therefore, measure actual fitness and feasibility of comparison of teaching resources based on online reading effect of multimedia materials. Then, teaching information feedback is evaluation basis to evaluate whether English multi-modal online reading mode reaches resource extension. It is not easy to directly collect students’ feedback information in this link. So, teacher should set up group teaching module similar to classroom teaching under network environment, and this module provides the feedback of teaching information, thus creating multi-modal evaluation basis for evaluation mechanism of English multi-modal online reading mode (Wu, 2015). At last, reading level improvement effect is level comparison based on learning time order. After application of English multi-modal online reading mode, quantization of evaluation standard and verification of teaching effect in students’ English reading level can help to master students’ learning progress. Multimedia technology is transmission mechanism of individual learning and the quantization should be made for perception effect of teaching effect evaluation. Perception effect takes understanding, experience, mastering and expression fluency of reading materials as basic evaluation dimensions. Master the improvement degree of multi-modal learning effect through online communication after students read multimedia materials, thus effectively discriminate whether English multi-modal online reading mode meets specific needs of staged teaching.

4. CONCLUSION

To sum up, overall architecture of English multi-modal online reading mode should uniformly combine teacher, student and evaluation mechanism and form entry point of multimedia technology. Then create online learning environment through multi-modal teacher teaching, take multi-modal student learning effect as architecture extension direction, and form favorable teaching resource closed loop, which can really give play to integration of multiple information resources of multimedia technology (Wang et al., 2011). Meanwhile on this basis, improve real-time communication of teaching feedback information through multi-modal teaching evaluation, thus solving the problem of difficult direct analysis and comprehensive understanding of teaching under network environment and reaching best effective communication with students, for smooth implementation of English multi-modal online reading mode and best expected teaching effect.

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