Research on the Information Technology Theoretical Methodology and English Learning Practical Mechanism in the Network Environment

Dexi Chen

Anhui Polytechnic University, Wuhu, Anhui, China
Email: howard19720808@163.com

Abstract

Construction and application of college English autonomous learning is the current hot research field of educational technology, the paper focuses on an updated and transformative college English learning mode and its deeper integration with the information technology and network environment. Both autonomous learning and network learning actually share the same quality of intuition and innovation and interact one another. The current situation of the English reform, a firm English foundation in China, the developing environment of computer and network technology and the feasibility of autonomous learning are all illustrated in this paper. Its necessary approaches and practical modes are cultivated and expounded based on the analysis of the advantages, characteristics and strategies of college English autonomous learning under learning change and innovation supported by the information technology.

Keywords: *information technology and network environment; English learning practical mechanism; approaches, modes and integration*

1. Introduction

Computers and Internet can not only make the information processed in the means of standardization but also make the information processed in the way of diversification and humanization, especially in the fields where information technology and network communication technology are combined. The development and progress of the Internet in China lays the solid foundation for the Internet of Things. This new way of network access, connecting everything in the best way, and this unified connection frame will extend the advantages of mobile technology to new industries and create new business models. New Internet technologies such as big data, cloud computing and artificial intelligence are reshaping Chinese society and the whole world in an all-round way. [1-4]

With great development of China's society and economy, the social demand for English is getting stricter and more urgent. It requires students to grasp proficient English skills and abilities on listening, speaking, reading, writing and translating. However, college English education still keeps in the traditional teaching mode in which the students passively receive English knowledge and the teacher gives the lecture. The lack of enthusiasm on English learning makes the students bored of learning English. As students' frequent use of passive learning strategies does not result in a good autonomous learning effect and they do not actively and autonomously learn English, the teaching effect can not be ideally fulfilled. Currently, college English education focuses on how to update college English education to meet the growing needs of technology development and to improve the autonomous learning ability and the comprehensive

English ability for college students. [5]

In fact, as early as January 2004, Higher Education Department Ministry of Education of China has issued college English curriculum requirements (trial), and it affirms the network multi-media auxiliary teaching mode of foreign language teaching, and regulates that colleges and universities shall widely use advanced information technology to promote English teaching based on computer and network so as to provide students with a good language learning environment. It further makes clear that the colleges and universities should make full use of multi-media and network technology to alter the former teacher-centered single class-teaching mode with the new teaching mode. The new teaching mode should be supported by modern information technology, especially network technology to make the English teaching not limited by time and place and develop in the direction of personalized and autonomous learning. Therefore, a new English teaching mode based on computer and network extends time and space of the teaching and creates conditions for autonomous learning, which lays the foundation for improving students' language ability. The ultimate aim of English teaching is to strengthen students' awareness of autonomous learning and improve their ability of autonomous learning. [6] Autonomous English leaning is a great concern of English teachers. In fact, many experts and scholars have done this kind of research on autonomous English learning under the internet context. [7-10]

In view of the current policy of Chinese government declaring the English to be canceled from the unified national college entrance examination in 2017(not put into practice later, only decreasing its proportion in the college entrance examination), China's colleges and universities must take immediate or slightly delayed response to college English teaching reform. Brewing college English teaching reform as early as a few years ago at Anhui Polytechnic University, 2017 has officially seen 11 natural teaching classes being changed into excellence engineer classes. In this way, college students'

English class learning hours has been greatly reduced. In particular, the initial teaching task of four semesters must be shortened to complete in three semesters, and each semester teaching hours must be cut about 20% of the former. In the fourth semester practical writing English has been taught in class, whose class hour is accounting for only 40% of the former course and all the effects must be decided by their students' Cet4 passing rate. Such a remarkable engineer class mode has been carried out from September 2017. In the background of sharply reduced class hours of college English, in order to teach better than before in the limited time, English teachers have to adjust themselves to the reform, and make full use of all available resources to help students cultivate their learning interests and to improve the learning efficiency. As a result, the rapid development of computer, multi-media and network technology provides a platform, which is interactive, interconnected and limitless (not being restricted by space and time), and contains extremely huge amounts of information and hyper-textbook communication environment to provide huge space for improving college students' English learning achievements. More importantly, the network environment of college English autonomous and collaborative learning has brought hope and possibility for the new situation of college English teaching reform so as to improve students' learning interests and alleviate teachers' teaching pressure. [11] At present, different kinds of colleges and universities in China are following the new situation of the development of higher education and deepening the college English teaching (learning) reform. The main trend is to design the "classroom instruction + network autonomous learning" mode by making use of modern information technology, from which the single teacher-centered traditional teaching mode can be transformed. [12]

2. English in China has an extensive mass foundation

The author in the second semester of 2016-2017 at Anhui Polytechnic University specially conducted a

questionnaire survey on college English curriculum study, and entrusted 12 college English teachers to give out nearly 1000 questionnaires (getting back 921 including about 450 students of all excellent engineer classes). The following are part of them.

choice Percentage Question	A	B	C	D	E
Question1	41.37%	45.06%	10.53%	3.04%	
Question3	22.37%	61.35%	11.62%	4.45%	
Question8	11.51%	16.61%	57.33%	4.13%	
Question7	58.74%	8.25%	15.64%	3.80%	4.56%

Question 1: do you think good English including five skills listening, speaking, reading, writing and translating in today's society of the increasing internationalization is relevant to your personal sustainable development in the future?

A very important B more important C less important D not important

According to general percentage based on the students' answer, the percentage of the answer A&D emphasizing English important is very high, accounting for 86.43%.

Question 3: what do you think of continuing learning English in the university?

A very necessary B necessary C non-necessary D don't know

It can be concluded from the answer to this question that the percentage of the vast majority of the students who think it very necessary (A) or necessary (B) to learn English is accounting for 83.72%. This provides the premise for my follow-up questions of this questionnaire.

Question 8: according to your own learning experience, what kind of English learning pattern do you prefer among the followings?

A. teacher-centered classroom learning B. autonomous learning by the network resources C. classroom teaching + independent learning D. others

One of the selected item A: teacher-centered classroom learning accounts for 11.51%; item B: autonomous learning by the network resources accounts for 16.61%; C: classroom teaching + independent learning accounts for 57.33%, it can be inferred that college students in our university is expected to learn English autonomously under the network environment with the guidance of their teachers.

Question 7: if the answer to question 6 is to choose C and D, what do you think of the main reason? (You may choose more than one option.)

A. not hard-working enough B. teaching content C. teaching mode and method D. class size E. others

The above ratio from A to E is the statistical data of all the students' participating in the survey. We can conclude that college students' individual efforts account for a considerable ratio, which indirectly proves that the importance of college English autonomous learning, followed by a larger ratio of C on teaching mode and the method, which is also an important factor to influence college students'

learning. We may make full use of the autonomous learning mode among college students based on computer and network environment to improve the students' English better in the future.

In effect, English teaching reform at Anhui Polytechnic University is only a miniature of the whole China English reform. English is one of the essential skills of Chinese people, who are full of high enthusiasm for English learning, especially college students in current China. In the current background of radical college English reform, English teaching(learning) should quickly change from teacher-centered to the student-centered mode, because the class teaching hours and face-to-face teaching time greatly reduced, and meanwhile the teaching contents are getting more, and teaching tasks heavier, so we must change students' passive learning into autonomous learning.

The rapid development of Internet technology and modern science has changed the people's lifestyle, work and communication for its flexibility, convenience and effectiveness greatly affect the development and reform of education.[13] And few Chinese students do not know how to use the network technology because those who can master the basic network technology come to realize that it is a shortcut to use the Internet to conduct the autonomous and collaborative learning.

The rapid development of modern information technology undergoes great changes in the world, but there are also some problems such as, students' individual needs are not well met, they lack consciousness, enthusiasm and motivation in English learning, and their personalized learning and English learning efficiency is not satisfying, etc.

3. The feasibility of the network teaching (learning)

We are now in an era where computer, communication and media technologies have converged to the extent that distinctions between computers, telephones and televisions are ones of function rather than form. Multi-functional devices differing primarily in physical size are now used to support the wide range of different activities that previously required particular specialized technologies. Therefore, in recent years the network autonomous English learning has been more and more important when computers and internet are used as educational tools which provide opportunities for college students to develop their autonomous language learning. [14] The network education in China, including our university on the hardware and software construction has been developed rapidly and made great progress. Hardware, a kind of infrastructure construction, has been setting up a computer network combined with satellite network covering urban and rural modernization education network. Software refers to namely network courses and the construction of a set of digital textbooks, covering a large range and full of many disciplines. China's colleges and universities have carried out the CALL (computer-assisted language learning) for over 30 years, which has many advantages such as more informativeness and strong interactivity. The rapid development of multi-media and network technology further promotes the college English teaching reform, and a college English autonomous learning mode based on combining the student-centered teaching conception with multi-media and network technology is currently an important developing trend in the process of college English teaching reform. It has also been proved that the teaching effectiveness of this kind of autonomous learning mode of college English based on ESP (English for Special Purpose) theory was very good, and furthermore, it must have a very high feasibility. [15]

As a typical example of communication and information technology applied in education----- Network teaching (learning) is an important approach to solving the development of higher education in the information age. The new teaching mode should be based on modern network technology, so that English teaching is not limited to

time and place, and toward the development of personalized, autonomous learning.[15] If multi-media teaching wants to play a more important role, the exploitation of network teaching (learning) must be the theme of the 21st century. Because of its wide coverage, network teaching (learning) can achieve a wider range of information resources sharing. Students have more opportunities to receive high quality education and equity pedagogy, and the approach to getting educated is no longer confined to the class education and school education. Learning is no longer to accept a single way of teaching from a school or inbreeding, but to acquire various forms of teaching methods, namely the diversity of learning.

The practice of autonomous learning does not require insight, a positive attitude, a capacity for reflection, but a readiness to be active in self-management and in interaction with others. The significance of the network teaching (learning) is to support collaborative learning, which can facilitate autonomous learning. Collaborative learning is a kind of advanced teaching and learning pattern in line with the modern education conception. The collaborative communication between students will make learning in-depth contents, learning opener thought, learning more diverse methods, raising more effective intelligence and learning more prominent efficiency. In order to develop network education complying with the trend of education reform, the emphasis on modern education thoughts in high education reform and introducing a series of new measures will be provided with a fertile soil for the development of network education. Diversity and feedback of network teaching (learning) can be helpful for "improving textbook design" and many of the new teaching methods and teaching ideas can be generated from the learners' questions and requirements so as to affect the teaching design and teaching reform.

Network learning is often referred to as digital learning or online learning, and it is defined by the authoritative European commission as using new media technology and the Internet to improve the quality of the study through using and promoting the opportunity of resources and services as well as the long-distance communication and cooperation. In China, for example, we can use Email, qq Email, qq chat video, blog, BBS, Microsoft MSN, sina Uctalk, fetion and Wechat, also use twitter, ICQ and Facebook to help the students to learn better. The teachers in our college who widely use such network media as Email, qq Email, qq chat video, blog, BBS, fetion, Wechat in the process of teaching, can conduct all-weather communication between teachers and students, and can also better guide the students' autonomous learning to improve the learning effects. Sometimes teachers' classroom teaching can be connected to the network, which is called online class, thus, many students can learn knowledge conveniently and constantly. This term I require all the students in my writing classes to submit their assignments on the website www.pigai.org. According to learning performance in the process of network learning, students can receive objective and timely evaluation, so the advantages of individual can be encouraged and the disadvantages can be reminded and guided without delay so as to effectively improve the students' learning methods and the quality of network teaching. [6] The learning feedback given can help students improve their learning methods and results. [1]

4.College English autonomous learning based on computer and network environment

4.1 The definition of autonomous learning

Autonomous learning in different scholars seems to have different definitions. Many scholars from home and abroad have made the definition of autonomous learning. [14,16-18] In brief, autonomous learning mainly includes the attitude, capacity and environment in foreign language learning. That is, learners should voluntarily take a positive attitude towards their own learning, have the ability and learning strategies to achieve their learning task

independently and be given enough chance to exercise their ability to manage their learning. It is also highlighted that, without a good external learning environment such as teachers, teaching facilities and learning materials, we will not be able to develop learners' autonomous learning attitude and ability. Therefore, the foreign language autonomous learning is a learner's conscious learning process to plan, monitor and test the reflection. That is, in online learning, students can choose the appropriate knowledge points according to their own situation to take exercises, and then give feedback about the exercise timely.[1]

4.2 The characteristics of the college English autonomous learning under the network platform

The college English autonomous learning in the network environment has its own distinct characteristics. The writer intends to illustrate the autonomous learning from two aspects, in-class autonomous learning and the extracurricular autonomous learning.

4.2.1 In-class network autonomous learning

As further development of the reform of China high education, college English teaching gradually change from the traditional teacher-centered to the student-centered teaching mode, by which high quality resources is selected and shown to students through diversified teaching means according to students' personalized learning requirements. For example, teachers can make use of micro class or Moocs to assign some homework to students to learn ahead of time. And the students only need to complete the assignments within the given time. Under the computer and network environment, students can freely choose the time to learn, decide what to learn including the study times of micro class or Moocs according to their personalized situation, and submit their homework, look into evaluation and obtain feedback, etc. All can be realized through the network platform.

The teaching contents and forms are diverse and interesting under the network environment, so

teachers can choose suitable teaching contents, and use proper teaching methods and means by the teaching objectives. Teachers classify the learning materials to students to learn under their guidance so as to realize the purpose of teaching students according to their aptitudes. Students spontaneously complete the learning task by multimedia and network platform according to their personal learning requirements, characteristics and interests to select studying contents freely. In this context, today's "smart class" emerges, which is a collection of new technologies including artificial intelligence, big data, virtual simulation and increasingly replacing traditional "knowledge class". In the new era, more and more Chinese colleges and universities are constructing or will be ready to construct the smart class which is believed to develop rapidly in the near future. Maybe it will be a new trend in education.

4.2.2 The extracurricular autonomous learning

Network environment provides a large number of timely, knowledgeable and interesting learning resources. In addition to completing in-class teaching tasks through the network platform, students can also browse, download and learn various high-quality educational resources after class by using smart phones and other mobile network devices so as to extend and expand of what they have learned in class.

Extracurricular network autonomous learning as a student's expansion and supplement of the classroom learning, accounts for a more and more important proportion in their English learning. It has become more and more indispensable because the extracurricular online learning has the characteristics of autonomy, mobility and convenience. The students can select learning contents freely by their own personalized needs regardless of limitation of time and place, which often can get better learning effects.

Network platform makes the practical principle of English learning come true. The scope of the college

English is wide, including vocabulary, grammar, reading and analyzing many aspects of training skills. English learning shows concern on the development of skills. Network online learning can develop the English learning skills. Autonomous learning information of students has been gained through the network data mining. [1] After doing it, college students' English learning has come into a new stage. The college English learning is no longer restricted by time and space, and no longer affected by mutual interference. Students can learn English without any external obstacles and burdens. In terms of training skills, students are freer to develop their outstanding professional level, such as listening, speaking, reading, writing and translating which will extend further, and emphasize the continuity of the knowledge system.

Network platform establishes the communication interface for English learning. In English learning, an important point is to train language-expressing ability, which needs long-term oral exercise. An apparent difficulty in English learning in China is no language environment for English learning. So, until now English is regarded as the most difficult subject, which is called "mute English". Network learning fundamentally solves the problem. Students studying in the network can select their favorite topics from various English materials such as VOA, BBC etc. to communicate sufficiently on the platform. During reading English articles and dialogues, to learn standard pronunciation and feel language sense is to achieve double progress on intelligence and ability. Creating an English environment is an important approach to improving English learning. The students can imitate and perform some standard English repeatedly on the network platform.

Adequate network resources extend the scope of English learning. Network environment has a large number of language example materials. The true communication pictures make students dispel the fear of English learning. Through the network teaching examples, students can feel the pleasure of learning English. College English learning is mainly

to promote the students' proficiency in English and professional knowledge. A good network English teaching (learning) process will enable students fully to feel the three-dimensional vivid network teaching, especially foreign teacher's personal demonstration which will make students feel and appreciate western original culture by speech learning. On the contrary, adequate network teaching resources can let the students choose freely, and even have immersive experience to stimulate learning interest.

4.3 The cultivation of students' autonomous learning ability in the network environment

Learning in the network environment really meets the needs so-called of learning what we want to learn everywhere at any time. The era of network autonomous learning has been gradually formed. Under this background, it is of great theoretical and practical significance to discuss how to cultivate and mine students' autonomous learning ways.

4.3.1 To strengthen the development of online courses in colleges and universities

The development of information technology has brought opportunities and challenges for the construction of university curriculum. The school should increase the investment of two aspects of hardware and software so as to actively create a diverse teaching and learning environment. On one hand, many colleges and universities set up the network learning platform or learning center, providing abundant network learning resources in foreign language teaching. For example, as discussed above, students can easily finish their in-class learning such as exercise and evaluation of learning. And at the same time, they can also realize extracurricular autonomous learning, such as downloading some British and American films, television products, test data and electronic books to build a good network learning environment for the students through the network learning platform into Colleges and universities. On the other hand, we should strengthen and cultivate teachers' information technology application ability, and classroom

learning is the main part of students' learning, so whether to use education technology and operate on the teaching equipment is directly related to the teaching effect. Therefore, schools should improve education technology through a variety of forms of training, help the teachers constantly to update the education idea, and promote information literacy. At the same time, colleges and universities should also encourage teachers to develop high quality network courses according to their own personal teaching experiences.

4.3.2 Enhance students' awareness of network autonomous learning

No matter how attractive and interesting the learning under the network environment, lack of consciousness of autonomous learning of students cannot make them achieve a good learning effect. Through investigation on the contemporary college students' autonomous learning situation under the network environment, college students' autonomous learning ability is greatly worrying, which is mainly displayed in the following: (1) lack of awareness of autonomous learning; (2) lack of information literacy.

First of all, it is very important to establish a scientific viewpoint of network. Today's college students mainly watch video, chat to date, browse information and shop on the network, etc. Fewer students can make full use of the network high quality resources to learn more. Their consciousness still stays on the recreational function of the network, ignoring the great potential network learning value. Thus, to set up the correct view of network learning, and take use of the network scientifically and effectively and make everyone learn constantly and everywhere will greatly be beneficial all the life.

Secondly, teachers must actively guide and encourage the students to learn everything useful on the network autonomously during the era of the information explosion because all kinds of information mix up together. On one hand, to guide students in information retrieval will make the

students search and find information quickly and effectively, on the other hand, to help students to filter and authenticate information to meet the personalized learning needs.

4.4. Teaching (learning) strategies of college English autonomous learning

4.4.1 Create learner-centered college English autonomous learning

A good teaching mode of college English autonomous learning is always learner-centered and the autonomous learning situations must be created, so knowledge structure is essentially constructed by individuals rather than instructed by others. The main body of learning is the learner. For language learning, the learner can acquaint the knowledge and improve the communication ability through much more practice. Therefore, English teaching should be learner-centered and the class should be interactive. The teachers must act as the organizer, instructor, helper and promoter of students in autonomous learning. Situational teaching is an important factor. The teachers should create a realistic situation in which the students are arranged to complete the learning task. In learning, the students should communicate with others and jointly cope with difficulties in learning. The teacher guides the students timely when they encounter the difficulties. The teacher also provides the students more learning materials and guides them to discover and solve the problems. [5]

4.4.2 Inspire the independent initiative of students and promote collaborative learning

The teaching (learning) should be learner-centered and takes the initiative of students. The students should actively take part in the class teaching (learning) and construct the knowledge structure autonomously. In teaching (learning), the teacher should make full use of the technology of multimedia and network to guide the learning of students. Before class, the teacher gives a related topic to the students and asks the students to search for the relevant information and discuss the topic.

The students collaborate to solve the problems. For the difficult problems, the teacher guides the students to search for the information through the Internet. Finally, the teacher summarizes the answer to the question and assigns the homework to students.[5]

4.4.3 Set a reasonable aim of learning and improve self-efficacy

As is known to us all, the construction of knowledge should be relied on the former experience and the previous knowledge structure of students. Therefore, the teachers should design their teaching contents by the students' personal conditions and guide the students to learn actively. The different students should adjust the teaching goal differently, which benefits the students to improve their self-efficacy. [5]

5. The way to combine network environment with college English autonomous learning

5.1 Play the role of guidance on network English learning,

The college English autonomous learning mode is established under the principles of guiding autonomous learning and emphasizing the responsive interaction collaboratively which has been proved to be efficient in facilitating students' personalized learning and autonomous learning. [12]

Network online learning has a large freedom, however, for its practicability of college education, it must be given certain guidance. After their setting the course, the teachers must categorize the teaching methods for different students. For example, some students are poor in oral English, so the teacher will select the typical English subjects for them to learn. In the process of guidance, teachers and students can communicate with each other sufficiently, while meeting some difficult language points, the teacher will illustrate. Students can quickly grasp the types and the connotation of knowledge. Online learning must be given the necessary guidance so that students can make full use of more information that should be learned.

5.2 Establish the hierarchical management of online learning based on students' existing knowledge,

Generally speaking, college students have some good English background. Every student has experienced different stages of English learning. The difference of students' knowledge structure affects curriculum arrangement of the network learning. Therefore, in the network English learning, we should fully consider the students' former English background and knowledge system, where exists some disadvantages that we try to make up for according to principles of specificity of learning. Building network learning hierarchical management mainly includes the classification of students' knowledge structure, students' basic level and teaching methods. Hierarchical management makes online learning have the irreplaceable teaching synchronicity, which can elevate the students' comprehensive development in the first place, control time of the hierarchical management and promote to construct the mechanism of the network platform.

5.3 Create a real network learning environment & let the English learning full of changes.

English learning has huge potentials, especially during the university, the mind of students varies greatly, so students must experience great changes in terms of mental aspects, which, on the one hand, promotes the rapid development of learning activities, on the other hand, hinders the constraining factors in the process of learning. Network learning environment requires schools to give students the necessary support and management. English teaching in the network environment must present English multi-media textbooks, including text, graphics, sound, video and virtual simulation, etc. Students expand the new channels in the process of exploring knowledge, broaden their horizons and establish the multi-level knowledge structures.

6. Conclusion

Autonomous learning supported by computer and

Internet is a practical mode of college English teaching (learning). College English autonomous learning mode based on computer and network is also a new attempt in terms of teaching concept, idea and method. College English autonomous leaning is a great concern of English teachers. As a college English teacher, we must act as the organizer, instructor, helper and promoter of students in autonomous learning. 5G, this kind of new Internet technology such as big data, cloud computing and artificial intelligence is reshaping Chinese society and the whole world in an all-round way. It is characterized by its low delay, high reliability and large connection, which changes and creates the world greatly. We should make full use of huge amounts of network resources, rectify disadvantages of online learning and develop the complementary advantages to establish a combination of the college English autonomous learning and network platform in Anhui Polytechnic University to complete the transformation of the informatization teaching to set a good example for some other peer institutions. For example, when I teach my students something like rock music, I encourage my students to search and retrieve more information of Ray Charles with me together, many of whose songs are appreciated in class. Such kind of immediate helpful information can arouse their great interest and receive a good teaching (learning) effect.

Acknowledgements

References

1. Han, Bing, Application of artificial intelligence in autonomous English learning among college students, International Journal of Emerging Technologies in Learning, 2019,(14):63-74.

2. Nan Guan, Jianxi Song, Dongmei Li, On the Advantages of Computer Multimedia-aided English Teaching, Procedia Computer Science,2018,(131):727–732.

3. BrianR.Gaines,From facilitating interactivity to managing hyperconnectivity: 50 years of human–computer studies, International Journal of Human-Computer Studies,(2019)1-17. https://doi.org/10.1016/j.ijhcs.2019.05.007

4. Yanhua Wang, Jeroma Talim, Online Mobile Teaching Methods Based on Android in the 5G Environment, International Journal of Continuing Engineering Education and Life Long Learning, 2020,(2):133-147.

5. H.M. Zhao, Study on the Teaching of College English Autonomous Learning Based on Constructivism, International Conference of Electrical, Automation and Mechanical Engineering EAME, 2015,308-310.

6. Bo Du, Yan Zhang, Jing Zhang, Dongming Li, Research of evaluation system of English autonomous learning ability based on BP neural network, International Journal of Multimedia and Ubiquitous Engineering, 2015,(10):25-134.

7. Jian Zhang, Zhong Qin, English Autonomous Learning on the Blackboard Academic Suite, International Journal of Continuing Engineering Education and Life Long Learning, 2012,3(4): 164-174.

8. Zhihua Jing, Jianqi Chen, Zhaoxia Li, Autonomous English Language Learning Aided by an Online Teaching System, International Journal of Information Technology and Management, 2014,(1):54-63.

9. Chunlin Yao, A Case Study on the Factors Affecting Chinese Adult Students' English Acquisition in a Blended Learning Environment, International Journal of Continuing Engineering Education and Life Long Learning, 2017,1(2):22-44.

10. Peng Sang, Analysis of the Influence of Multimedia Network Hybrid Teaching on College Students English Learning Ability, International Journal of Continuing

Engineering Education and Life Long Learning, 2019,1(2):44-55.

11. Tilford, S. Clifton, J. Brice, L. Wiggins-Smith, J. Penrose, L. & Farooqi, N.. Influence of Sex Education on Condom Knowledge and Use Proficiency among Texas College Students. Contraception, 2013, (88):473-473.

12. Xiaoxin Chen, Xiao Shang, A Study on the Construction of a Multi-Level Autonomous Learning Mode in College English Teaching, Studies in Literature and Language, 2015,(10):16-20.

13. Jun Liu, Study on the Autonomous Learning of College English Based on Online Learning Platform, International Journal of Smart Home, 2016, (10):165-174.

14. Yang Cao, 2nd International Conference on Consumer Electronics, Communications and Networks, CECNet 2012 - Proceedings, 2012:104-106.

15. Fei Chen, Agro Food Industry Hi-Tech, 2017, (28):1050-1054.

16. Ningning Zhang, International Journal of Database Theory and Application, 2016, (9):157-166.

17. Dickinson, L. Autonomy and motivation: a literature review. System, 1995, (23): 165 -174.

18. W. Littlewood, Autonomy: An anatomy and a framework, System, 1996, (24): 427-435.