



Analysis of E-learning English Teaching Path Based on Reinforcement Learning

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Abstract. With the deepening of China's opening to the outside world, China's demand for English talents is gradually increasing. As a compulsory subject for high school students, it is not objective for high school students to take office in the field of English on the premise of large market demand and sufficient talent reserve. Higher vocational colleges have always emphasized the education goal of taking employment as the center. On this basis, this paper hopes to cultivate high-quality talents through the analysis of English education in Higher Vocational Colleges in the cloud computing environment.

Keywords: Cloud computing · English teaching · Employment orientation

1 Introduction

In the situation of deepening opening up to the outside world, in the context of economic globalization, English plays an increasingly important role in work and life, and the requirements for individual English level are also higher. Employment is the purpose of vocational education. The employment situation and employment environment have changed greatly. If the English Teaching in vocational colleges is still in accordance with the previous teaching mode and path, it will not adapt to the new situation and will not help to solve the employment problem of students in higher vocational colleges. Therefore, the English Teaching in higher vocational colleges must stress the guiding ideology of employment, deepen the reform of English teaching path, aim at the market demand and train excellent talents with high quality and strong majors.

In the context of post epidemic, it has become the mission of every educator to establish a community of human destiny and cultivate talents with international vision, family emotion, cross-cultural communication ability and global victory. 20 experts and 10 front-line teachers brought profound ideas and wonderful lesson examples to the teachers participating in the activities from the perspectives of discipline reform, curriculum construction and classroom teaching, and explained the new mission, new paradigm and new direction of English education in the new era to English educators. The first day of the conference focused on the concept, with the theme of "international understanding and cultural heritage, are English teachers ready?" for the theme, many English education experts were invited to deeply explain the new international understanding education paradigm and the style of new English education in the future. As shown in Fig. 1, English teaching path analysis.

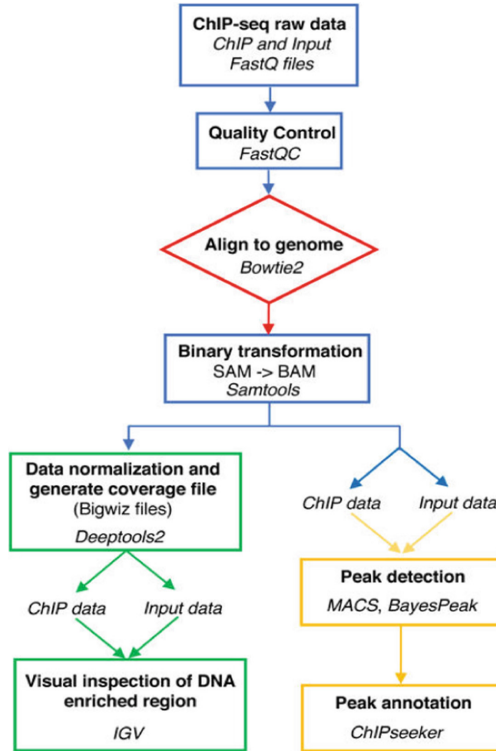


Fig. 1. Analysis of English teaching path

This paper consists of the following parts. The first part introduces the relevant background and significance of this paper, the second part is the related work of this paper, the third part is the main problem, the fourth part is data analysis. The fifth part is example analysis. The sixth part is conclusion.

2 Related Work

Zakarnah investigated the effectiveness of using e-learning platform to teach the English language to students in Arab universities [1]. Gillian et al. presented evidence about research-based teaching techniques that aided making the e-learning tool designed for this research more effective than traditional teaching methods when teaching English articles (e.g. ‘a’, ‘an’, and ‘the’) [2]. Qian studied this phenomenon, starting from the development of E-learning and its application in college English reading education, and propose a reasonable teaching method for the current English reading teaching mode and E-learning structure [3]. Ja’ashan attempted to find out the challenges students’ face in learning English as a foreign language when using E-learning system at University of Bisha [4]. Therefore Singh et al. aim to present a systematic review of appropriate published studies to determine ESL teachers’ attitudes towards the use of elearning and identify issues faced by ESL teachers in the use of e-learning [5]. AlSaqqaf et al. attempt

to investigate the level of e-learning technological readiness among English language teachers to utilize e-learning in teaching during the MCO in Malaysia [6]. Yumnam explored the various e-learning practices into making effective teaching of English as a second language [7]. Therefore Hu et al. aim at investigating the level of ESL teachers' technology acceptance towards integrating e-learning into English teaching at secondary schools in Sabah, Malaysia, by examining the constructs of Perceived Usefulness (PE), Perceived Ease of Use (PEOU), Attitude towards Usage (ATU), and Behavioral Intention (BI), which were extracted from the Technology Acceptance Model (TAM) proposed by Davis [8]. Purwantoro et al. investigate students' and teachers' perceptions, and the effectiveness of e-learning madrasah in English teaching and learning [9]. Other influential work includes Ref [10].

While helping students learn and master language knowledge and pragmatic competence, it should form the emotional attitudes and values needed to build a community of human destiny. The wonderful sharing brought by several English education experts from different angles explained the educational objectives and practical direction of English education in the new era of international understanding education, defined the new style of English classroom in the future, and brought profound ideas to the participating teachers. Experts and famous teachers discussed how to creatively integrate "Chinese elements" into English classes [11].

3 The Main Problem

3.1 The Construction of English Teachers Cannot Fully Meet the Teaching Needs

In recent years, the number of students in Colleges and universities has increased rapidly, while the number of teachers who undertake English teaching tasks is growing slowly. The teaching tasks of English teachers are heavy, and there is not enough energy and time to ensure the high-quality teaching effect. The education level of English teachers in higher vocational colleges is generally low, the professional quality is not strong, the scientific research ability is insufficient, the new teaching concept is not well understood, which leads to the lack of in-depth and incomplete English teaching reform, and still adopts the old teaching mode, which can not keep pace with the times and affect the quality of teaching.

$$u_{k+1}(t) = u_d(t) - (u_k(t) + L(t)(\dot{e}_{k+1}(t) + e_{k+1}(t))) \quad (1)$$

$$\sup_{0 \leq t \leq T} \|\Phi(t)\| = \rho, L(t)C(t)P^{-1}(t) \quad (2)$$

3.2 Still Follow the Backward Teaching Mode

In the actual English teaching, most vocational colleges have not changed the backward teaching mode according to the situation. They still adopt the teacher centered teaching method, taking themselves as the leader of the class. A class is full of teachers from the beginning to the end, which does not provide students with the opportunity to think,

question and communicate, so that the whole class is passive to accept knowledge. This kind of singleton teaching method also severely restricts the students' thinking, makes them rely too much on the teachers' answers and puzzles, lacks the consciousness and autonomy of learning, and strikes their curiosity and enthusiasm of learning, and makes the English knowledge they learn can not be applied to the actual communication activities, which has resulted in the consequences of high scores and low abilities. Figure 2 shows the English teaching path model.

3.3 Uneven Quality of Students

With the expansion of enrollment of general higher education institutions and high schools and the changes of other enrollment policies, the quality of students in higher vocational colleges has been declining continuously. In order to meet the enrollment targets, higher vocational colleges have lowered the entrance threshold, making a large number of students with poor achievements and weak cultural basic knowledge enter the colleges. These students have common characteristics of low interest in learning, weak learning consciousness and low learning efficiency. Many students even have a serious fear and disgust towards English, and their quality is uneven.

$$\|\Delta u_{k+1}(t)\|_{\lambda} \leq \tilde{\rho} \|\Delta u_k(t)\|_{\lambda} + m_5 d \quad (3)$$

$$\lim_{k \rightarrow \infty} \|\Delta e_{k+1}(t)\|_{\lambda} \leq \left(\frac{m_1 m_5}{b - \lambda} \frac{1}{1 - \tilde{\rho}} + \frac{p}{b} \right) cd \quad (4)$$

On November 24, 2020, the "2015 National Foreign Language School Teaching Forum and lecture observation online seminar" hosted by the "non foreign research institute" of foreign language teaching and research press was successfully concluded! More than 30000 English teaching researchers, discipline leaders and front-line teachers from all over the country gathered in the cloud. They discussed the theme of "language teaching and ideological education, foreign language teaching with the organic integration of content and education", and jointly discussed the internal relationship and realization path between language teaching and thinking training, curriculum content and academic training, so as to trigger the majority of teachers to innovate teaching methods, improve the quality of foreign language teaching, and achieve the basic value of textbooks and teaching materials.

The theme of this year's forum is "foreign language teaching with the organic integration of language and thinking, content and education", which is based on this thinking. As English teachers, we must pay attention to cultivating students' thinking quality, improving their dialectical thinking, innovative consciousness and the ability to analyze and solve problems. Teachers can design and implement teaching materials that meet the cognitive characteristics of students at different stages in their respective classrooms.

Professor Herbert bowta combines the specific cases of Cambridge new thinking English Youth Edition to analyze how to cultivate students' critical thinking. With diversified ideas, the construction of campus culture can create an international understanding atmosphere. Through the parallel use of multiple editions of teaching materials, students

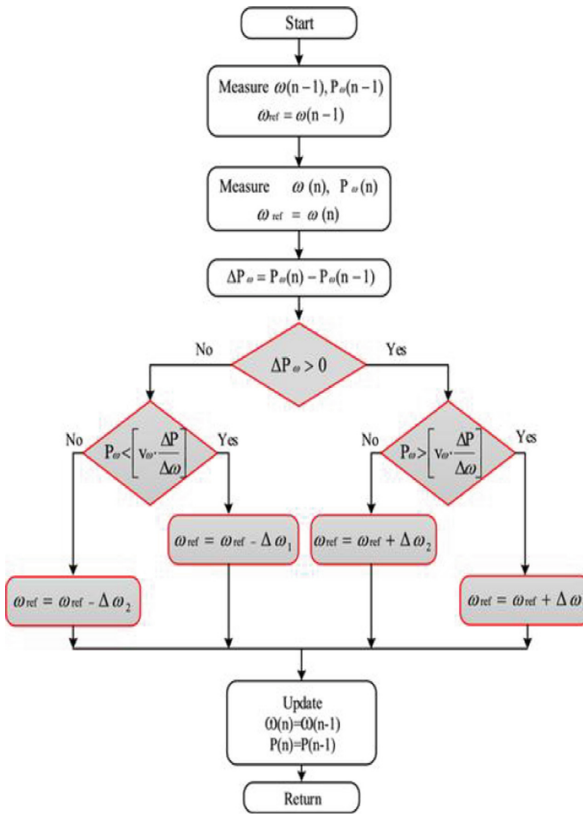


Fig. 2. English teaching path model

can be taught international etiquette, understand various cultures of the world, tolerate and understand the differences of the world, so that they can have an international vision and cross-cultural understanding.

4 Data Analysis

Cloud computing provides users with IT infrastructure such as data center computing, storage, network and its development platform, software and applications in the form of services. Its core idea is to manage and schedule computing resources connected through a large number of networks to form a computing warehouse and provide services for users according to their needs. The architecture of cloud computing is shown in Fig. 3.

Professor Liu Peng of PLA University of technology defines cloud computing in two ways. Long term definition cloud computing is a business computing model. The computing work is distributed to the computer resource pool. Different applications can be used to make use of computing power, storage space and information services

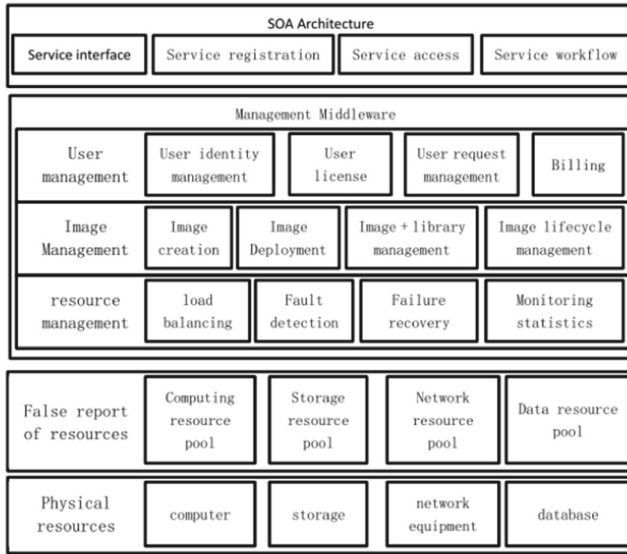


Fig. 3. Cloud computing architecture

according to needs. The short definition is: “cloud computing is a cheap computing service that can be dynamically scalable on demand through the network” which is shown in Fig. 4.

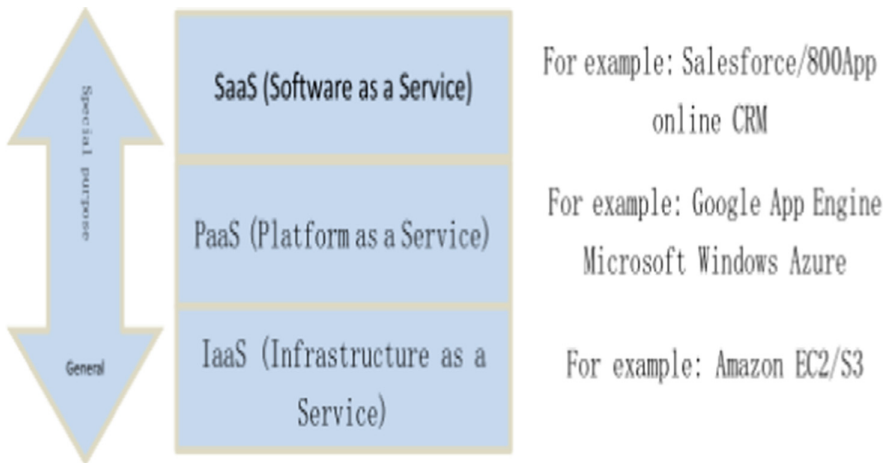


Fig. 4. Classification of cloud computing

5 Example Analysis

5.1 Change of Teaching Concept

First of all, the teaching concept should be changed. From the perspective of enterprises, we should think about the application of English ability, and carry out corresponding classroom teaching on this basis, so that students can quickly step into and adapt to work after graduation. Secondly, teaching reform should be carried out in many aspects. Such as according to the actual situation to choose the best teaching materials. Finally, in the classroom teaching, the setting of teaching objectives should be application first, adhere to the student-centered teaching method, effectively combine students' career development and employment methods, and implement teaching in the classroom, so as to ensure that college students can meet the requirements of the school and have strong employability.

Solving the problem of "what kind of people to train and how to train" has always been the theme of China's education reform. Under the general trend of all-round development of quality education, how to cultivate high-quality applied talents with practical and innovative ability has become a key subject of educational research in various disciplines. Among them, in order to implement the basic concept of the national "high school English curriculum standard", further improve students' oral English ability and promote the development of comprehensive language and language ability. Through years of AI intelligent language evaluation technology and strong academic ability, ETS qishiyu education technology has developed AI intelligent English hearing improvement solutions for domestic high school students. The comprehensive and professional scores and dimensions make the feedback more targeted, the learning path design more intelligent and personalized, effectively improve the learners' ability and achievement, and have made many achievements in Teachers' professional development.

In addition, drawing on a large number of student data accumulated by ETS in more than 180 countries around the world, UTS qishiyu education technology conducted an in-depth investigation on Chinese teenagers' English listening ability through scientific methods.

It is committed to combining cutting-edge AI technology with English learning and testing to provide Chinese students with the most intelligent and efficient auditory learning solutions. Based on strong academic ability, accumulated technical experience and mature evaluation system, and based on a large number of real research data, it analyzes the bottleneck of improving Chinese teenagers' English listening and speaking ability, and is committed to effectively integrating cutting-edge AI automatic scoring and feedback technology to provide Chinese students with scientific and personalized learning ways, Help front-line teachers carry out English teaching and research more efficiently.

5.2 Changes in Teaching Methods

To construct the mixed curriculum mode and optimize the innovative teaching form. Although the teaching mode under cloud computing has many advantages, such as rich and centralized teaching resources, diversified teaching forms, and mobilizing students' interest and enthusiasm in learning, the cloud computing teaching mode still can not

completely replace the traditional face-to-face teaching mode, and it does not have all the advantages of classroom teaching. Therefore, it can not be the only teaching mode in the current teaching, so the construction of mixed teaching mode is very necessary. In the process of College English teaching reform and innovation, teachers should fully understand the students' actual learning situation, carefully analyze the advantages of multimedia teaching, integrate and compare the two, and then formulate a perfect application scheme, give full play to the advantages of cloud computing resources, effectively stimulate students' learning enthusiasm and initiative, and enrich English teaching content. At the same time, students can choose the corresponding course video according to their own interests, cultivate students' awareness of autonomous learning, and then comprehensively improve students' ability. For example, teachers can play some English videos, Ted speeches and other open classes in the classroom, so as to enrich the content of College English teaching and expand the scope of English teaching.

5.3 Stimulate Students' Interest in Learning

Such as inviting professionals to give lectures, organizing English drama competitions and so on. Set up "English club" to attract students, expand and develop students' communication circle. After joining the club, we can carry out club activities, such as organizing English story Solitaire competition, which can not only improve students' self-confidence in oral expression, but also tap students' potential in learning, and can combine theory with practice, so that students can better apply English to life, so as to avoid the situation of high test scores and poor oral ability.

5.4 Integration of Teaching Staff

To a certain extent, the teaching quality is affected by the Faculty of a school. Therefore, to innovate the employment oriented teaching mode, we need not only a team of teachers with solid English professional knowledge and rich technical experience, but also constantly add fresh blood to this team to make it more powerful. To achieve team building, we must find talents from enterprises, start from examples, make professors more practical, better teach students relevant practical experience, and lay a good foundation for the innovation of English professors. In addition, teachers should always pay attention to the needs of social enterprises for English talents, adjust the education model, make teachers become a bridge between students and the market, and effectively improve the employment rate of students.

6 Conclusion

To sum up, there are a large number of students studying English in China, but there is a lack of high-end practical English translators. Based on cloud computing, it is not only beneficial to cultivate students' English practical ability, but also to improve the efficiency and quality of teaching to continuously explore and study the employment oriented problems in Higher Vocational English teaching, and reform and innovate the

teaching path. In order to serve the society better, it is necessary to cultivate qualified and practical English translators for the society and transform the advantage of number of translators into the advantage of quality.

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References

1. Zakarneh, B.M.: Effectiveness of e-learning mode for teaching English language in Arab Universities. *Int. J. Appl. Linguist. Engl. Lit.* **36**(10), 72–84 (2018)
2. Gillian, E., Lew, R.: Incorporating research-based teaching techniques in e-learning to teach English articles. *Int. J. Inf. Sci.* **88**(2), 1123 (2018)
3. Qian, Y.: Application research of e-learning network teaching platform in college English reading teaching. *Kuram ve Uygulamada Egitim Bilimleri* **92**(3), 64–78 (2018)
4. Ja'ashan, M.M.N.H.: The challenges and prospects of using e-learning among EFL students in Bisha University. *Arab World Engl. J.* **56**(2), 567–588 (2020)
5. Singh, K.K., Yunus, M.M.: Using e-learning in English language teaching: a systematic review. *Int. J. Acad. Res. Prog. Educ. Dev.* **88**(1), 3202–3214 (2021)
6. AlSaqqaf, A., Ke, H.: Investigating e-learning readiness during the COVID-19 pandemic among Malaysian ESL teachers: what are the limitations of current scales? *KNE Soc. Sci.* **34**(2), 445–456 (2021)
7. Yumnam, R.: E-learning: an effective mode of teaching English as a second language. *J. Transl. Lang. Stud.* **2**(11), 559–572 (2021)
8. Hu, K., AlSaqqaf, A.: Investigating Malaysian teachers' technology acceptance towards integrating e-learning into English teaching. *J. Engl. Lang. Teach. Innov. Mater. (JELTIM)* **24**, 498–520 (2021)
9. Purwanto, A., Asari, S., Maruf, N.: The effectiveness of e-learning madrasah in English teaching and learning. **290**(5500), 2323–2326 (2021)
10. Irawan, R., Surjono, H.D.: Pengembangan e-learning berbasis moodle dalam meningkatkan pemahaman lagu pada pembelajaran bahasa inggris. *J. Inovasi Teknologi Pendidikan* **101**(12), 59–69 (2018)
11. Peng, N.N.P., Zhu, N.N.F., Ling, N.N.X., et al.: Improving deep reinforcement learning by safety guarding model via hazardous experience planning. *Front. Comput. Sci.* **16**(4), 164320 (2021). <https://doi.org/10.1007/s11704-021-0250-y>
12. Novati, G., Laroussilhe, H., Koumoutsakos, P.: Publisher correction: automating turbulence modelling by multi-agent reinforcement learning. *Nat. Mach. Intell.* **1**, 397–402 (2021)